BOARD OF DIRECTORS
AGENDA PACKET
Monday, October 13, 2014
2:30 p.m.

Sonoma County
Permit & Resource Management Department
2550 Ventura Avenue
Santa Rosa, California
BOARD OF DIRECTORS AGENDA

October 13, 2014 – 2:30 p.m.

Sonoma County Permit & Resource Management Department
Planning Commission Hearing Room – 2550 Ventura Avenue, Santa Rosa, CA

1. Call to order the meeting of the Sonoma County Transportation Authority (SCTA) and the Sonoma County Regional Climate Protection Authority (RCPA)

2. Public comment on items not on the regular agenda

3. Consent Calendar
   A. SCTA Consent
      3.1. Measure M – FY13/14 annual reporting letters; status report (REPORT)*
   B. SCTA/RCPA Concurrent Items
      3.2. Admin – Executive Director contract Amendment No. 3 (ACTION)*
      3.3. Admin – RCPA Climate Action Planner job description (ACTION)*
      3.4. Admin – Minutes of the September 8, 2014 meeting (ACTION)*

4. Regular Calendar
   A. RCPA Items
      4.1. RCPA Planning
          4.1.1. Climate Action 2020 – presentation by Climate Protection Campaign on Proven and Promising Climate Measures from U.S. Communities for Possible Application in Sonoma County (REPORT)*
      4.2. RCPA Projects and Programs
          4.2.1. RCPA activities report (REPORT)*
   B. SCTA Items
      4.3. Planning
          4.3.1. Planning – Comprehensive Transportation Plan performance measures and call for projects (ACTION)*
      4.4. SCTA Projects and Programming
          4.4.1. Highways – update on State Highway projects (REPORT)
   C. SCTA/RCPA Concurrent Items
      4.5. Shift – car sharing grant proposal for submittal to MTC (ACTION)*
      4.6. Cap and Trade – disadvantaged communities; update on State and regional approaches to communities of concern (REPORT)*
      4.7. PUBLIC HEARING – Final Budgets for FY14/15 (ACTION)*
          4.7.1. SCTA Operating Budget
          4.7.2. RCPA Operating Budget
          4.7.3. Measure M Budgets
          4.7.4. Transportation Funds for Clean Air Budget
5. Reports and Announcements
   5.1. Executive Committee report
   5.2. Regional agency reports*
       SMART      NCRA      MTC      Self Help Counties Coalition
       ABAG      BAAQMD      CALCOG      GGBHTD      Sonoma Clean Power
   5.3. Advisory Committee agendas*
   5.4. SCTA/RCPA staff report
   5.5. Announcements

6. Adjourn

   *Materials attached.

The next SCTA/RCPA meetings will be held November 10, 2014

Copies of the full Agenda Packet are available at www.sctainfo.org

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SB 343 DOCUMENTS RELATED TO OPEN SESSION AGENDAS: Materials related to an item on this agenda submitted to the SCTA/RCPA after distribution of the agenda packet are available for public inspection in the SCTA/RCPA office at 490 Mendocino Ave., Suite 206, during normal business hours.

Pagers, cellular telephones and all other communication devices should be turned off during the committee meeting to avoid electrical interference with the sound recording system.

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Staff Report

To: Sonoma County Transportation Authority
From: Seana L. S. Gause, Senior – Programming and Projects
Item: 3.1 – Measure M Annual Reporting Letter Status Update
Date: October 13, 2014

Issue:
What is the status of the annual reporting for expenditures of Measure M funds this past fiscal year (FY13/14)?

Background:
The Traffic Relief Act of Sonoma County requires that agencies receiving Measure M funds report on how those funds were spent in a given fiscal year. Reporting letters are due on September 15 of each year, reporting on the previous fiscal year. This requirement is outlined in the 2014 Strategic Plan, Policy 4.12. Reporting letters are required for the following programs:

- Transit/Rail (LBT/Rail)
- Local Streets Rehabilitation (LSR)
- Local Streets Projects (LSP)
- Bicycle/Pedestrian Projects (Bike/Ped)

If an agency fails to submit Measure M reporting letters by the deadline, the Strategic Plan states that the next fiscal year’s allocation or reimbursements for expenditures (in the case of Local Streets or Bike/Ped Projects) may be withheld until the reporting letter is received. Upon the suggestion of the auditor, governing bodies of any Measure M recipients delinquent in submitting annual reporting letters may be notified in writing.

The LSR program allows cities to carry over funds for up to three years in order to amass funds for larger projects. The program also requires that if an agency has chosen to carry over funds from previous fiscal year’s allocation, interest on the sum must be reported. Banked funds must be spent in the third year, or SCTA reserves the right to withhold the next year’s allocation until the jurisdiction’s balance is drawn down, as is outlined in the Strategic Plan, Policy 4.1. This year, one jurisdiction had banked Measure M funds for three years and reported lack of expenditure in the third year but provided justification for the lack of expenditure. Further, the jurisdiction has plans to spend the funds within nine months but was unable to expend the funds within FY13/14. Several jurisdictions show a partial expenditure of funds, but are banking some portion of balance for future expenditures.

Three LSR reporting letters (Cloverdale, Cotati and Healdsburg) were not submitted by the 9/15/14 deadline. All three letters have since been received.
LBT program funds are distributed on a quarterly basis. All transit agencies receiving Measure M funding are required to submit an annual audit to accompany their reporting. Because the annual audits usually take some months to produce after the close of the fiscal year, they are not always complete by the reporting deadline of September 15, thus transit agencies are given until December 31 to submit the required audit. Reporting letters remain due on September 15 each year. Santa Rosa Citybus submitted their annual reporting letter late this year.

All other reporting letters for the LSP, LBT, Bike/Ped and Rail programs were submitted on time. This summary has been provided to the Technical and Citizens Advisory Committees.

**Policy Impacts:**
None, these procedures are consistent with the policy established in the Traffic Relief Act of Sonoma County, and the 2014 Strategic Plan.

**Fiscal Impacts:**
None

**Staff Recommendation:**
None, this is an informational item only.
Staff Report

To: SCTA/RCPA Board of Directors

From: SCTA/RCPA Executive Committee

Item: 3.2 – Agreement for Personal Services – Amendment No. 3 for the Executive Director of the SCTA/RCPA

Date: October 13, 2014

Issue:
Shall the SCTA/RCPA Board of Directors take the recommendation of the Executive Committee to authorize a 2% salary increase for the SCTA/RCPA Executive Director effective July 1, 2014?

Background:
The SCTA/RCPA Executive Director is currently under contract with the SCTA/RCPA through June 2017 and that contract allows for salary adjustments based on performance reviews.

The Executive Committee has conducted a performance review and recommends the Executive Director’s contract be amended effective July 1, 2014 to include a 2% pay increase and that the Executive Committee provide a further review in March 2015 for consideration of an additional 2% increase.

Copies of the original contract and amendments are available upon request.

Policy Impacts:
None.

Fiscal Impacts:
The salary increase is approximately $3,200; there are minor adjustments to benefit costs that follow salary amounts.

Executive Committee Recommendation:
Authorize the Chair to sign the Agreement for Personal Services – Amendment No. 3 for the Executive Director of the SCTA/RCPA.
AGREEMENT FOR PERSONAL SERVICES – AMENDMENT NO. 3

EXECUTIVE DIRECTOR
SONOMA COUNTY TRANSPORTATION AUTHORITY

This Agreement is made this _13_ day of _October_, 2014 by and between the Sonoma County Transportation Authority, a public agency (hereinafter “AUTHORITY”) and Suzanne Smith (hereinafter “EMPLOYEE”).

RECITALS:

WHEREAS, AUTHORITY and EMPLOYEE executed an Agreement for Personal Services (“Agreement”) on November 1, 2009 for the position of Executive Director which would have expired on its own terms on June 30, 2014; and

WHEREAS, since the Agreement was executed in 2009 there have been two amendments, dated March 14, 2011 and June 10, 2013, respectively, to adjust accrued vacation time, extend the term of the agreement to June 30, 2017 and provide a salary increase; and

WHEREAS, the scope of work required of the EMPLOYEE has significantly increased since 2009 with the creation of the Regional Climate Protection Authority (“RCPA”) and its attendant and growing responsibilities; and

WHEREAS, the services of the EMPLOYEE have been exemplary and provided significant benefit to the AUTHORITY and RCPA; and

WHEREAS, AUTHORITY and EMPLOYEE are desirous to amend Section 5(a) of the Agreement related to contract term and compensation, respectively, effective July 1, 2014.

NOW, THEREFORE BE IT AGREED by and between the parties as follows:

AGREEMENT

1. Section 5 (a) of the Agreement, setting forth the compensation of the Agreement, is deleted in its entirety and replaced with the following language:

   (a) EMPLOYEE’S annual salary shall be $162,909. Salary increases may be established by the AUTHORITY following performance reviews.

2. Except to the extent the Agreement is specifically amended or supplemented hereby, the Agreement, together with exhibits and schedules is, and shall continue to be, in full force and effect as originally executed, and nothing contained herein shall be construed to modify, invalidate or otherwise affect any provisions of the Agreement or any right of AUTHORITY arising there under.

IN WITNESS WHEREOF, the parties hereto have executed this Third Amendment as set forth.
EMPLOYEE

DATED:______________   BY:_____________________________

Suzanne Smith

AUTHORITY

DATED:______________   BY:_____________________________

Sarah Glade Gurney, Chair SCTA/RCPA

APPROVED AS TO FORM

DATED:______________   BY:_____________________________

Cory O’Donnell, Counsel
Staff Report

To: RCPA Board of Directors
From: Suzanne Smith, Executive Director
Item: 3.3 – RCPA Climate Action Planner job description
Date: October 13, 2014

Issue:
Shall the SCTA/RCPA adopt the attached job description for the RCPA Climate Action Planner position?

Background:
In November 2012, the RCPA established the Climate Change Program Analyst position as one of two full time positions at the RCPA. At that time it was clear the staff support was needed but less clear the scope of the work that would be carried out, the appropriate title for the position and the caliber of expertise that would be required. There was also less clarity about how their time would be billed.

Since 2012, the RCPA has been the recipient of several grants that, when combined with local contributions, make the agency sustainable financially for the next several years. The work product that will derive from the grants – primarily Climate Action 2020, Bay REN programs such as Pay As You Save, and Shift Sonoma County – require a high degree of knowledge and skill to manage and develop.

The Climate Change Program Analyst position, currently filled by Misty Mersich, leads Climate Action 2020, engages in energy efficiency work through Bay REN, represents the RCPA in multiple public venues, manages consultant contracts and is routinely called up on to engage in varied climate related policy and program activities and discussions. The requirements meet and, in some cases, exceed the requirements of the SCTA Transportation Planner position.

To more accurately reflect the nature of the position it is recommended that the salary range be adjusted to align with the SCTA Transportation Planner position, the job description be adjusted to represent the scope of work required of the position (attached) and the title be changed to Climate Action Planner.

Policy Impacts:
None.

Fiscal Impacts:
The proposed salary range is included in the FY14/15 SCTA/RCPA budgets per direction from the Executive Committee.

Staff Recommendation:
Consider approving the proposed Climate Action Planner job description.
Job Description - RCPA Climate Action Planner

About RCPA:
The Sonoma County Regional Climate Protection Authority (RCPA) was created in 2009 to coordinate countywide efforts among the nine cities and multiple agencies in Sonoma County on climate change issues. RCPA is assisting the cities and County of Sonoma in implementing their adopted goal of reducing countywide greenhouse gas emissions (GHGs) by 25% below 1990 levels by 2015. RCPA is made up of the same Board of Directors as the Sonoma County Transportation Authority and includes representatives from each of the nine cities in Sonoma County and the Board of Supervisors.

RCPA manages several programs including a countywide multi-jurisdictional climate action planning and implementation project (Climate Action 2020), a residential Retrofit Program, transportation planning to reduce GHGs, and others.

About the Climate Action Planner position:
The RCPA Climate Action Planner is a professional staff person responsible for performing planning and analysis functions. The position manages, under the general direction of the Deputy Director of Climate Programs, elements of or entire planning projects related to reducing GHGs and becoming more resilient to climate change in Sonoma County. The position also assists the Deputy Director on the implementation of a wide range of climate change and emission reduction efforts, including coordination across RCPA members and partners. This requires a general knowledge of local, regional, state and federal policies related to energy, transportation, planning, water and wastewater as well as familiarity with funding programs and legislative advocacy. The Climate Action Planner will be working on a daily basis with city and county staff, as well as non-profit stakeholders and consultants. The Climate Action Planner must also be able to effectively communicate RCPA’s mission to homeowners, the business community, contractors, and the general public at meetings and events.

The position requires knowledge of and abilities relating to:
- Laws and regulations regarding GHGs and emissions reduction at local, regional, and state level
- Principles of climate change science
- Principles of local government planning
- Interrelationships between government agencies at all levels
- Interdisciplinary emission reduction programs in energy, water, green building standards, transportation, land use planning, and more
- Contract management and reporting contract deliverables
- General financial and budgetary matters
- Grant writing
- Public speaking and presentations

The position also requires the following skills:
- Analysis and problem solving skills
- Working knowledge of financial and budgetary systems
- Flexibility and self motivation
- Decision making
- Excellent verbal and written communication
Duties include, but are not limited to the following:
1. Coordinating the development of RCPA planning projects and assisting in the preparation of planning documents
2. Serving as staff to and assisting in organizing internal RCPA committee meetings, leading meetings, taking minutes
3. Representing the RCPA externally, at a variety of meetings, public events, committees, and other related activities
4. Overseeing grant and/or contracts, invoices and reimbursements
5. Tracking and reporting grant and/or contract deliverables and budgets
6. Researching and developing best practices and policies
7. Giving presentations to groups including the RCPA Board
8. Writing and editing letters, memos, reports and proposals
9. Managing climate action data collection and databases

Qualifications
The minimum qualifications for the Climate Action Planner include:
• A Bachelors degree in environmental policy, management, planning, or a related discipline; Masters degree preferred.
• Minimum of three years full-time work experience in a climate change-related field, project management, environmental resource management, policy, planning, or related discipline.

This position requires strong personal time management, an eye for detail, and a “can do” attitude. The position involves significant RCPA member, partner, and consultant coordination, project management and reporting, and dynamic engagement with elected officials, local government staff, and members of the public.

The Climate Action Planner position is considered an employee of the SCTA. As such, the Planner is entitled to those benefits provided by the SCTA and described in the Sonoma County Transportation Authority Personnel Policies and Procedures Manual – including health care, retirement, paid holidays, vacation time, and sick leave. Possession of a valid California Drivers License is required.

The salary range is $5,500 to $6,700 monthly.
BOARD OF DIRECTORS MEETING
Meeting Minutes of September 8, 2014

ITEM

1. Call to order the meeting of the Sonoma County Transportation Authority (SCTA) and the Sonoma County Regional Climate Protection Authority (RCPA)

Meeting called to order at 2:35 p.m. by Chair Sarah Gurney.

Chair Gurney announced the attendance of sister cities Sebastopol, Sonoma and Petaluma at a press conference for the proposed Sonoma County Living Wage ordinance. She observed the correlation between transportation and sustainable employment and noted the commute residents need to make in order to support themselves, in light of the cost of housing.

Directors Present: Director Gurney, City of Sebastopol, Chair; Director Allen, Town of Windsor; Director Carlstrom, City of Santa Rosa; Director Gallian, City of Sonoma; Director Harris, City of Petaluma; Director Landman, City of Cotati; Director McGuire, Supervisor, Fourth District; Director Rabbitt, Supervisor, Second District; Director Russell, City of Cloverdale.

Directors Absent: Director Chambers, City of Healdsburg; Director Mackenzie, City of Rohnert Park; Director Zane, Supervisor, Third District.

2. Public comment on items not on the regular agenda

None.

3. Consent Calendar

A. SCTA Consent

3.1. Measure M – Street Smart Sebastopol appropriation request for FY14/15 (ACTION)*

3.2. Measure M – Foss Creek Trail appropriation request for FY14/15 (ACTION)*

3.3. Measure M – GC Preston P.C. contract extension (ACTION)*

B. SCTA/RCPA Concurrent Items

3.4. Admin – Minutes of the July 14, 2014 meeting (ACTION)*

Motion by Director Gallian, seconded by Director Rabbitt, to approve the Consent Calendar.

At the request of Director Carlstrom, Item 3.3 was removed from the Consent Calendar to be considered separately.

Motion amended by Director Gallian to approve Consent Items 3.1, 3.2 and 3.4, with Item 3.3 to be removed from the Consent Calendar and considered separately. Motion passed unanimously 8-0-4-0 (Directors Allen, Chambers, Mackenzie, and Zane absent).

3.3 Measure M – GC Preston P.C. contract extension (ACTION)*

Director Carlstrom confirmed with Suzanne Smith changes noted in the amendment from the original contract, citing several schedules in the original contract that she wished to cross-reference and changes in paragraph 2.1. She confirmed with Ms. Smith that the increase reflected in this paragraph is not salary or profit, but for time and materials. Discussion followed regarding consistency in the format of agreements and amendments going forward, so as to ensure clarity.

With this clarification, Director Carlstrom moved for approval of Amendment No. 3 to the Agreement for Consultant Services by G.C. Preston, P.C. The motion was seconded by Director Landman, and carried unanimously, 8-0-4-0 (Directors Allen, Chambers, Mackenzie, and Zane absent).

4. Regular Calendar

A. SCTA/RCPA Concurrent Items

4.1. Planning – car sharing Request for Qualifications (RFQ) related to feasibility and implementation (ACTION)*
Dana Turréy presented a request for the Board to authorize staff to proceed with the August 29, 2014 release of a Request for Qualifications to conduct a car share feasibility study and potential car share implementation, and preparation of an application for the MTC Car Sharing Program grant.

Motion by Director Gallian, seconded by Director Russell, to approve the release of a Request for Qualifications to conduct a car share feasibility study and potential car share implementation. Motion passed unanimously 8-0-4-0 (Directors Allen, Chambers, Mackenzie, and Zane absent).

B. RCPA Items

4.2. RCPA Projects and Programs

4.2.1. Energy Efficiency – update on the PACE Marketplace, financing tools for homeowners and commercial properties (REPORT)*

Lauren Casey introduced Jane Elias, Community Programs Manager for Sonoma County Energy Independence Program (SCEIP) who gave a presentation updating the Board on the Sonoma County PACE Financing Marketplace.

Ms. Elias reviewed relationships between the partner agencies in the Sonoma County Sustainability Program; customer services, including municipal and community programs; community programs of the Energy Independence office and financing options; benefits of the financing marketplace; the PACE financing marketplace; and a “mockup” online template form of the marketplace showing an example of a consumer online financing request, including rates and fees.

In response to Board questions, Ms. Elias explained that some consumers who are paying off their entire assessment are bringing funds back for others to access. Approximately $400,000 to $500,000 per month has been bonded over the past year. It is estimated that, pending no changes with the Sonoma County Water Agency funds of $15 million and $45 million in the County Treasury, at least three to four years of continued activity should be generated, with more contractors, providers, and more consumers. The goal of SCEIP is to retrofit at least 80% of the existing buildings in Sonoma County to at least a 30% energy efficiency increase; this would represent approximately a $3 billion market.

4.2.2. RCPA activities report (REPORT)*

Lauren Casey reported that staff has been working with the Stakeholder Advisory Group on feedback received by the Board at the previous Special Session held in August to evaluate and improve reduction strategies and conducting analysis on additional targets.

Staff is also working with the North Bay Climate Adaptation Initiative (NBCAI) on a draft vulnerability assessment of Sonoma County.

Staff also participated in the first ever California Adaptation Forum in August, hosted by the Local Government Commission (LGC) and the RCPA led a panel on efforts to respond to climate change in Sonoma County. Staff is working with LGC staff and other local partners on piloting a regional adaptation forum focused on Sonoma County or the North Bay.

Staff is also exploring the possibility of participating in the Rockefeller Foundation’s 100 Resilient Cities, an effort to aid cities to become more resilient to 21st century physical, social and economic challenges, shocks and stresses; these include climate change, cataclysmic events (e.g., fires and earthquakes) and the stresses that undermine cities’ infrastructure, economy, health and social well being (violence, unemployment, overtaxed or inefficient public transportation, food and water shortages).

Board comments included identifying drought as a significant local issue.

Ms. Casey next summarized activities with respect to energy efficiency and the BayREN programs, which have seen good success regionally, with over 1,000 retrofit projects completed or under way and over $1.2 million to homeowners in incentives. Sonoma County continues to be an active participant, with $260,000 paid or reserved since September 2013 to support residential retrofits.

Codes and Standards training is currently being made available through BayREN to familiarize building departments and those in the industry with changes to the California Energy Code. Staff is working with partners, including the
Ms. Casey recognized the efforts of Climate Corps Fellow Adriana Stagnaro, who led community engagement as an intern with the RCPA. She then introduced Jeremey Arroyo, the new Climate Corps partner working with RCPA staff.

Director Gallian suggested that the Board draft a letter of appreciation of Ms. Stagnaro’s work on behalf of the RCPA. The Board concurred. Chair Gurney added that she would work with staff on preparing the letter.

Ms. Smith announced that Ms. Stagnaro was recently hired by the Gold Ridge Resource Conservation District in Sebastopol, and had expressed her appreciation for the mentorship and valuable experience she received working with the RCPA.

C. SCTA Items

4.3. SCTA Planning

4.3.1. Comprehensive Transportation Plan – revised public engagement strategy (ACTION)*

Ms. Spilman reviewed previous Board concerns regarding conducting a telephone poll, and explained that this component of the public engagement strategy has been suspended indefinitely. Outreach will continue by means of the advisory committees, stakeholder groups and online engagement. Ms. Spilman invited suggestions for any stakeholders from the Board.

Motion by Director Gallian, seconded by Director Russell, to direct staff and advisory committees to review the CTP planning process and provide assessment, and to provide contact information for stakeholder meetings. Motion passed unanimously (9-0-3-0; Directors Chambers, Mackenzie and Zane absent).

4.3.2. Priority Development Areas – update to the Investment and Growth Strategy (ACTION)*

Under the One Bay Area Grant (OBAG) the SCTA is required to approve the update to the Priority Development Area (PDA) Investment and Growth Strategy, which was approved in May, 2013.

Sonoma County is required to spend 50% of OBAG project funds in PDAs, and in the last round of OBAG funding spent over 90% in PDAs.

Ms. Spilman pointed out that Sonoma County policies support the regional goals to a large degree. There remain some areas of concern. Among them are differences in SCTA and regional definition of “Communities of Concern,” noting that Sonoma County has often been overlooked in being considered for funding programs benefiting these communities. She also explained that local jurisdictions do not agree completely with ABAG’s forecast of housing and employment in the designated areas. Transit service requirements of becoming a PDA, combined with underfunding of transit operations, continues to be a source of frustration. The unincorporated County urban service areas, now designated as rural community investment areas, are technically not PDAs and are still not eligible for OBAG funds, which is another source of frustration.

Discussion followed regarding the withdrawal of Corte Madera from ABAG and the possibility that they will rejoin in the future. Ms. Spilman noted that, thus far, this has not impacted Sonoma County, and noted that this excludes Corte Madera from certain funding opportunities.

Ms. Spilman explained that staff had determined that areas with concentrations of population with income of 200% of the poverty level would be considered a “Community of Concern.”

Ms. Smith referred to the data gathered in “A Portrait of Sonoma County,” noting that a meeting is scheduled to discuss these issues.

Board comments referred to the fact that the State determines what the lowest threshold of Communities of Concern can be and that Sonoma County could be at a disadvantage if it aligns with the minimum standards for being constituted a Community of Concern.

Additional comments addressed the disconnection of the transportation and pothole funding from the Pavement Condition Index and instead aligning it with a more nebulous PDA. Director Gallian noted that the City of Sonoma
is not included in the data because it does not have a PDA. She announced that they are currently updating their Housing Element; she expressed the wish to include this information in the data. Further discussion addressed the need to clearly understand a project when it comes up for consideration and thus make an informed decision as to whether or not to approve it.

Steve Birdlebough of the Transportation and Land Use Coalition stated that transportation and land use are inexorably connected, but that automobiles and housing are being considered separately. He noted that developments are required to include a minimum amount of parking in their building plans, and cited the need to fund transit in order to make more transportation options available to the public.

Motion by Director Landman, seconded by Director Carlstrom, to approve the PDA Investment and Growth Strategy update. Motion carried unanimously (9-0-3-0; Directors Chambers, Mackenzie and Zane absent).

4.4. SCTA Projects and Programming

4.4.1. Ridesharing – presentation on status of Carma program (REPORT)*

Ms. Spilman introduced Brant Arthur of the Climate Protection Campaign, Project Manager, who gave a presentation on the development of this program and recent activities. He reported that Ann Hancock of the Climate Protection Campaign wished to thank the Board for their partnership and support in this effort, and he thanked Ms. Smith and Ms. Spilman for their hard work and significant contribution to this project.

Mr. Arthur announced that the sixth version of the Carma app is due to be released within the next two weeks, and that each iteration has been developed in response to public comments and suggestions.

The program includes Sonoma, Marin and Contra Costa County. To date there is a total of over 5,000 participants in the program, 1,620 of who are in Sonoma County. 45.2 tons of GHG been reduced since 2012. The total reduction in vehicle miles traveled is 233,199 miles. Data shows that Sonoma County trips are the shortest.

Among the organizations that have supported and promoted this program are Agilent, the County of Sonoma, Amy’s Kitchen, Santa Rosa Junior College, and the Sonoma County Water Agency.

Mr. Arthur next introduced Teresa Gaynor, Community Manager for the San Francisco Bay Area for Carma, who reported that staff is working on the partnership of Carma with 511 and continuing expansion of this program throughout the entire Bay area. She pointed out the valuable data available through the program (membership, number of passenger trips, demographics, distance traveled, etc.).

Mr. Arthur responded to questions from the Board regarding demographics of Carma members, noting that this is available on Facebook; data shows slightly higher number of female participants than male, and age of members varies widely.

The Board congratulated Mr. Arthur on the success of the program, expressing their appreciation, and commended the hard work of Carma and SCTA staff.

4.4.2. Local Funding – update on possible tax measures related to transportation (REPORT)*

Ms. Smith announced that on August 12 the Board of Supervisors placed two items on the March 2015 ballot, one for a quarter-cent general tax and an Advisory Measure. She then deferred to Director Rabbitt to report on the status of this issue in greater detail.

Director Rabbitt reported that by the end of the current construction season 150 miles of roads in Sonoma County will have been repaved, representing the most significant amount of road work done in Sonoma County in 30 years. He cited the need for a long-term investment plan for rebuilding and maintaining the County road system.

Director McGuire explained further the need for a more robust investment plan for the County road system and proposed next steps in this process; the gas tax has not risen at the federal level since the 1990’s, and even with local
funding, with the downturn in the economy, additional funding is needed. 56% of the proposed tax revenues would be allocated to the cities, 44% to the County, and 10% would be committed to transit.

Director McGuire next reported that the Board of Supervisors voted to be able to postpone the measure, and that on September 30 the Board will be examining another issue directly related to transit; the County will be providing free bus passes to students. It is yet to be determined whether this will be high school or middle school students, or Santa Rosa Junior College students.

Director McGuire thanked Director Carlstrom for the contribution made to this effort by the City of Santa Rosa.

Director McGuire next reported that the Board of Supervisors is also working with local veterans’ services and the Veteran’s Administration to offer free transit service to veterans.

In October the Board will evaluate a final road plan and consider final recommendations for a community engagement initiative for unincorporated areas of the County. In November, the Board will take a final vote for possible inclusion in the March 2015 ballot.

Director Rabbitt reported that significant public outreach has taken place on this measure.

Board questions included whether this would be a general or specific vote, and whether the measure would pass on a two-thirds vote. Director McGuire explained that this is yet to be determined, and that individual city councils would determine the allocation of tax revenues for their respective jurisdiction. Concerns were expressed regarding a March 2015 election. Additional comments expressed appreciation for having additional time to consider the measure.

4.4.3. Highways – update on ramp metering in the Hwy 101 corridor (REPORT)*

James Cameron referred to the handout showing a map of the Highway 101 ramp progress and a calendar showing the implementation metering.

Project limits are southbound from Arata Lane in Windsor to Pepper Road just north of Petaluma, and northbound from Highway 116/East Cotati to Shiloh Road in Windsor. Operating hours will be 6:00 to 10:00 a.m. and 3:00 to 7:00 p.m.

Implementation will begin September 9 southbound on Highway 101 with solid green lighting. The cycle will begin starting the second week in the mornings, and afternoon/evening cycling will begin September 23. Northbound meter activation will start October 7 with solid green lighting, with cycling to begin in the morning on October 14, then cycling in the afternoon/evening starting October 21.

Adjustments are in progress to the queue loops in order to prevent traffic on the ramp from backing up on to the surface streets.

Board suggestions included the need to include these updates on local media, including television traffic reports, newspapers and online. The need for public education and for drivers to become familiar with the metering was also addressed. Mr. Cameron pointed out that it is a locally-responsive system that can be adjusted by Caltrans according to the rate of traffic.

4.4.4. Highways – update on State Highway projects (REPORT)

Mr. Cameron reported that staff has been addressing issues connected with the closing of the Fulton Road onramp at the Airport Boulevard Overcrossing. A successful ribbon cutting took place July 21. Sound walls are complete. Staff has been working with Caltrans on signal timing issues. Final punch list items will continue through the end of the year until completion.

Mr. Cameron next advised the Board of two future stages in construction that will be occurring at the Highway 101 Central C project (the Old Redwood Highway Interchange).

Mr. Cameron responded to Board concerns regarding signage issues at the southbound Airport Boulevard off ramp and confusion on the part of drivers as to which direction to turn. He confirmed that he would follow up with Caltrans and coordinate revised signage.
All ramps are now open on Old Redwood Highway. Both loop onramps will be closed the week of September 22 and will require eastbound and westbound traffic to turn left using the new diagonal ramps for approximately six to eight weeks. Another closure is tentatively scheduled for spring 2015 for six to eight weeks for the next stage of construction.

Two southbound closures are scheduled for the Marin-Sonoma Narrows (MSN) B-2 project (the Petaluma River Bridge). One closure will take place September 15; the second closure is scheduled for September 19. Traffic will begin using the new bridge traveling northbound in October.

The MSN B-3 project is scheduled to be considered by the California Transportation Commission (CTC) in October. Utilities were a major challenge, but the project is now back on schedule. This is expected to be under construction in spring 2015.

Seana Gause reported that the Highway 12/Laguna de Santa Rosa Bridge Replacement project is moving forward, and that Caltrans had resolved some of the right of way issues and got the utility contractor to proceed with utility relocation. The contract that was awarded for construction but was suspended and will be opening up again in spring 2015.

A kickoff meeting took place for the Highway 116/121 project initiation. Parsons has been brought on board and the project is moving forward.

On the Hearn Avenue project, PID has been completed and staff anticipates having a kickoff meeting September 11.

Ms. Gause next reported that on College Avenue a discrepancy was identified between the actual elevation and design elevation. In some areas this is two feet; Caltrans is in the process of redesign and getting estimates. If the project has to return to the CTC for consideration and approval, STIP funding will be requested.

Ms. Smith added that she had attended a kickoff meeting for the second phase of the UC Davis/Caltrans Joint Plan Study of Highway 37. She noted it was well attended, and that she would be updating the Board on further developments.

5. Reports and Announcements

5.1. Executive Committee report

The Committee discussed items that will be included in the draft budget for 2014/15 and addressed at the October Board meeting.

5.2. Regional agency reports*

SMART NCRA
MTC Self Help
Counties Coalition
ABAG BAAQMD
CALCOG GGBHTD
Sonoma Clean Power

Sonoma Clean Power: Director Landman welcomed Cloverdale as a new member, as well as Vice Mayor Bob Cox, who will be attending the next Board meeting.

Director Landman next announced the purchase of power for Phase 2 customers through 2015, noting that previous to this purchase, roughly 50% of the renewable portion of energy represented 33% of the portion that SCP purchases, and with RECS this is down 5%, showing a significant reduction.

Staff is awaiting the outcome on two ProFIT applications.

5.3. Advisory Committee agendas*

Included in the agenda.

5.4. SCTA/RCPA staff report

Nothing new to report.

5.5. Announcements

None.

6. Adjourn

4:29 p.m.
Staff Report

To: RCPA Board of Directors

From: Misty Mersich, Climate Protection Program Analyst

Item: 4.1.1 Climate Action 2020- Climate Protection Campaign White Paper- Proven and Promising GHG Reduction Measures

Date: October 14, 2014

Issue:
Release of Climate Protection Campaign’s white paper entitled “Proven and Promising Measures from U.S. Communities for Possible Application in Sonoma County.”

Background:
As a part of the Strategic Growth Council grant for Climate Action 2020, the Climate Protection Campaign (CPC) was tasked with analyzing local scale greenhouse gas emissions (GHG) reduction measures throughout the United States. The resulting report identifies actions other communities have taken that have resulted in significant emissions reductions, the relationship of these actions to climate action plans, and the possible application to Climate Action 2020 implementation program.

The main questions the paper attempted to answer are:
- What are the most effective actions a local community can take to significantly reduce GHGs?
- What is the cost of these actions? How much time did it take to implement the measures and see the results?
- Can these reductions be attributed to Climate Action Plans?

CPC conducted a nationwide e-mail/phone survey and web based research identifying successful actions, and determined if any of these actions might be applicable in Sonoma County. The information in this paper is useful for the Sonoma County communities currently evaluating GHG reduction measures to pursue their jurisdiction. The white paper was written for Sonoma County policymakers; local government staff; leaders and stakeholders from business and the community. It has been shared with the Climate Action 2020 Stakeholder Advisory Group, and the jurisdictions’ planning staff through the SCTA Planning Advisory Committee. It will be made public on the Climate Action 2020 website www.sonomarcpa.org/climateaction

Policy Impacts:
None.

Fiscal Impacts:
None.

Staff Recommendation:
Information only.
Proven and Promising Climate Measures From U.S. Communities for Possible Application in Sonoma County

Prepared as part of Climate Action 2020, a program of the Sonoma County Regional Climate Protection Authority and the County of Sonoma

By Stacey Meinzen and Ann Hancock
Climate Protection Campaign
www.climateprotection.org

August 2014
Executive Summary

The purpose of this report is to present proven and promising measures to support Climate Action 2020, a collaboration of communities within Sonoma County and the Regional Climate Protection Authority (RCPA). Climate Action 2020’s goal is to identify specific, implementable actions that Sonoma County jurisdictions can take to ensure their communities remain vibrant and resilient in an ever-changing climate.

Under the auspices of Climate Action 2020, the Climate Protection Campaign in fall 2013 conducted a nationwide online and phone survey of communities that have succeeded in reducing greenhouse gas emissions. Additional web-based research including academic sources was conducted to supplement the findings. Information from this survey was compiled, supplemented with online research, and placed in the Sonoma County context. This was done to take a fresh look at successful actions being implemented by other U.S. communities to reduce greenhouse gas emissions, and to determine if any of these actions might be applicable in Sonoma County. The survey and online research not only identified many promising measures, but also revealed that Sonoma County is indeed a leader in climate protection efforts in the United States. Below are the top findings of the study pertaining to key sectors for greenhouse gas reductions.

Renewable Energy: By far the most powerful measure under local control for significantly reducing greenhouse gas emissions is switching from fossil to renewable fuel sources for electricity generation. Washington D.C., Marin County, Palo Alto, Oberlin, New York City, Snohomish County, and Minneapolis all had sizable emissions reductions from such fuel switches. Sonoma Clean Power (SCP), a new local program that started serving customers in May 2014, now offers Sonoma County businesses and residents much cleaner power than was previously available. With SCP, this community now has a means to work toward a goal of 100 percent renewable power. The County can also support local renewable energy development by considering a reduction in solar permitting fees, using online permitting, and requiring that all new developments are solar-ready. Local energy leaders can create synergies by integrating local renewable energy development, energy efficiency, demand response, intelligent grid management, and financing, and by promoting successful existing local programs.

Energy Efficiency: Because over 30 percent of Sonoma County greenhouse gas emissions are associated with energy use in buildings, measures to increase building energy efficiency remain an important, cost-effective strategy. This report describes top proven and promising programs in green building ordinances, energy efficiency programs, energy use disclosure laws, retro-commissioning programs, and public-private partnerships. Further research of best practices is needed to identify effective programs to make buildings far more efficient than they are today.

Transportation and Land Use: Local solutions for reducing greenhouse gas reductions in this sector remain elusive not only in Sonoma County where over 50 percent of greenhouse gas is produced, but also throughout the country. Communities with transit-oriented development have lower per capita emissions from transportation. Such measures hold promise for Sonoma County for the long term. For the near term, solutions for Sonoma County to pursue are supporting the switch to electric vehicles, increasing Transportation Demand Management programs, supporting bicycle use, car-sharing, carpooling, and linking bus and train systems.

Solid Waste: Sonoma County has laid a foundation in the solid waste sector for emission reductions that was triggered by its decision to retain ownership of its solid waste system. The County must continue to aggressively maximize composting and recycling of organic material such as food waste and construction and demolition debris. Additionally, Sonoma County should prepare to capitalize on emerging opportunities to convert waste into energy.

Carbon Sequestration: Sonoma County can maximize carbon sequestration by preserving and managing its forests, agricultural and wild lands, and setting a bold goal for planting more urban and suburban trees.
**Financing:** Financing is a critical though often unacknowledged part of the solutions in all sectors discussed above. Because economic incentives remain the most politically palatable and potentially powerful strategy for reducing emissions, Sonoma County must continue to focus on financing strategies for reducing emissions.

**Tracking Progress and Building Awareness and Support:** To ensure accountability for producing targeted emission reductions and to build community awareness and support for climate protection, Sonoma County needs a systematic approach to tracking and reporting its climate protection progress, and for publicly recognizing successful efforts.

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**Recommendations**

**1.0 Renewable Energy**

1.1 Optimize Sonoma Clean Power to significantly and rapidly reduce GHG emissions

1.2 Support local renewable energy development by considering a reduction in solar permitting fees, using online permitting, and that all new developments install solar

1.3 Integrate local renewable energy development, energy efficiency, demand response, intelligent grid management, and financing

**2.0 Energy Efficiency**

2.1 Identify and implement best practices for aggressively increasing the energy efficiency of buildings

2.2 Expand and strengthen energy use disclosure requirements

2.3 Develop a commercial commissioning / retro-commissioning program

2.4 Use public-private partnerships such as performance contracts for municipal buildings

**3.0 Transportation and Land Use**

3.1 Accelerate the electrification of the transportation sector

3.2 Expand transportation demand management programs

3.3 Require that growth in new and existing developments be zero-carbon, i.e., energy efficient and renewable energy generating, city-centered, walkable, bikable, transit-oriented, and mixed-use

3.4 Prioritize funding for active (non-motorized) modes of transportation

**4.0 Solid Waste**

4.1 Work toward zero waste by maximizing recycling, composting, and diversion of organic material from the landfill

4.2 Capitalize on emerging opportunities to convert waste into energy

**5.0 Agriculture and Forestry**

5.1 Support agricultural practices that increase carbon sequestration

5.2 Support forestry practices that increase carbon sequestration

**6.0 Financing and Fees**

6.1 Use proven and develop new financing mechanisms to accelerate implementation of recommended measures

**7.0 Tracking progress and building awareness and support**

7.1 Measure and report Sonoma County’s progress toward its climate protection goals

7.2 Build Sonoma County’s awareness and support for climate protection
Research Approach and Challenges

In fall 2013 top-performing U.S. climate protection communities were identified with help from ICLEI representatives and other experts. These communities were surveyed online and by phone to identify their best practices. Additional web-based research including academic sources was conducted to supplement the findings.

This report describes and, to a limited extent, analyzes the results of the survey and online research. Criteria for assessing community measures included the greenhouse gas (GHG) emissions reduced, the cost and time to produce the reductions, and the degree of political effort required, if any.

Most U.S. communities currently do not aspire to reduce their greenhouse gas emissions and therefore do not track them. Of the few communities that do aspire to reduce emissions and that track progress, only a few are actually achieving significant emission reductions. Of these communities, a handful knows with certainty the causes of their reductions. As noted in the phrase common to researchers, correlation is not causation. For example, measuring the proportion of emissions reduced by the economic downturn versus by other factors requires rigorous analysis.

Another challenge for this research was the lack of information from communities surveyed including a lack of program detail to ascertain possible application to Sonoma County and a lack of metrics-based evidence for claims of success. Moreover the scope of this report precluded comprehensive research that may have shed light on key evidence for such claims. Therefore, several recommendations in this report call for further research.

Leading U.S. Communities and their GHG Emissions Reductions

The table below highlights leading U.S. communities and their achievements, ranked by highest to lowest GHG reduction achievements. All communities below were surveyed except Gainesville, New York, and Portland.

The most powerful measure for emissions reductions in the communities studied was switching the electricity fuel source from fossil to renewable. Next, improvements in energy efficiency and solid waste management appear to be the causes for significant emissions reductions. Community-scale measures that reduce emissions in the transportation sector generally remain elusive across the U.S.

Recommendations based on research for this report are presented in the section that follows. Greater detail and background for the recommendations, information about the survey, names of the communities surveyed, and additional suggestions are shown in this report’s appendices.
Leading U.S. communities and their GHG emission reductions

<table>
<thead>
<tr>
<th>Community</th>
<th>GHG reduction, time span</th>
<th>Population</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oberlin, Ohio</td>
<td>50% 2007-2015</td>
<td>8,300</td>
<td>Reductions primarily from switching from coal to renewable energy - mostly landfill gas and hydropower (90% carbon-free)³</td>
</tr>
<tr>
<td>New York City, New York</td>
<td>16% 2005-2011</td>
<td>8,336,697</td>
<td>Reductions included 7 M tons from greener electricity, 5.9 M tons from electricity resource mix, 1.5 M tons energy efficiency³</td>
</tr>
<tr>
<td>San Francisco, California</td>
<td>14.5% 1990-2010</td>
<td>837,442</td>
<td>GHG emission reductions produced in a variety of sectors. One of first U.S. cities to take climate action and to issue a local-level climate action plan (2005)³</td>
</tr>
<tr>
<td>Minneapolis, Minnesota</td>
<td>14% 2006-2012</td>
<td>392,880</td>
<td>Reductions from greener electricity, decreased natural gas consumption, and fewer emissions from the airport⁴</td>
</tr>
<tr>
<td>Snohomish Co., Oregon</td>
<td>13.4% 2000-2005</td>
<td>745,913</td>
<td>Reductions mostly from greener electricity⁵</td>
</tr>
<tr>
<td>Washington, D.C.</td>
<td>12% 2006-2011</td>
<td>646,449</td>
<td>Reductions from greener electricity and energy efficiency⁶</td>
</tr>
<tr>
<td>Berkeley, California</td>
<td>8% 2000-2012</td>
<td>115,403</td>
<td>Reductions primarily from residential energy efficiency and waste diversion. Berkeley's total GHG emissions from building energy use decreased approximately 13 percent between 2000 and 2011. Solid waste disposal decreased by approximately 43 percent from 2000 to 2011 – a reduction of approximately 48,000 tons of landfill waste.⁷</td>
</tr>
<tr>
<td>Gainesville, Florida</td>
<td>7% 1990-2013</td>
<td>126,047</td>
<td>Reductions primarily from greener electricity (source mostly biomass/forestry waste), also from energy efficiency⁸</td>
</tr>
<tr>
<td>Portland, Oregon</td>
<td>6% 1990-2010</td>
<td>603,106</td>
<td>Overall per capita emissions down 26% since 1990. Energy used per capita down 17% since 1990.⁹ More than 1,000 homes have been weatherized, more than 1,400 homes and businesses have installed solar panels, food scraps for compost are collected from nearly 150,000 households, and the number of bicyclists has climbed by 14%.¹⁰</td>
</tr>
</tbody>
</table>

1 Page 16 of CAP: [http://www.cityofoberlin.com/images/omlps/2013%20cap%20online%20pdf.pdf](http://www.cityofoberlin.com/images/omlps/2013%20cap%20online%20pdf.pdf) and ICLEI. Oberlin contrast starkly with Sonoma County in two important ways: Its previous electricity source was coal, and its total population size – approximately 8,000 – is much smaller.  
4 City of Minneapolis: [http://www.minneapolismn.gov/sustainability/indicators/WCMS1P-087163](http://www.minneapolismn.gov/sustainability/indicators/WCMS1P-087163)  
5 Page 12 of Snohomish inventory and forecast: [http://www.co.snohomish.wa.us/documents/County_Services/Climate_Energy/InventoryReport42808.pdf](http://www.co.snohomish.wa.us/documents/County_Services/Climate_Energy/InventoryReport42808.pdf)  
6 Survey (“Survey” in this and subsequent footnotes signifies that the source of the referenced information is the survey conducted as the first stage of the Climate Protection Campaign’s research for this paper.)  
Most Proven and Promising Measures for Sonoma County

Sonoma County is already implementing many proven measures. For Sonoma County to achieve its GHG emission reduction goals, far more transformative change is needed. The next leg of Sonoma County’s climate protection journey may entail more aggressive implementation of proven measures as well as more forays into unchartered, albeit promising, territory. This may entail more experimentation with and incubation of promising measures coupled with an accelerator phase for projects that pass the incubator phase. Thus, this paper features both the most proven and most promising measures for Sonoma County to consider.

The measures below are arranged by sector. Selection of measures was guided by the criteria listed above as well as by researchers’ judgment. Further analysis is needed to determine with greater certainty the applicability and availability of financing for the measures described in this paper.\textsuperscript{11} Consideration should be given to policy mechanisms for effectively implementing the measures below. One promising approach is to begin with voluntary measures that progress to mandatory if targets are not met by specified deadlines.

Financing is shown separately below as the sixth sector to emphasize its importance. Financing cuts across all sectors and can fuel the engine to transform our fossil fuel-based economy. Because economic incentives remain the most politically palatable and potentially powerful strategy for reducing GHG emissions, financing strategies deserve special attention.

1.0  Renewable Energy

\textit{Introduction:}  Sonoma Clean Power (SCP) promises to be a powerful, game-changing innovation platform that provides significant opportunity for rapid GHG emissions reductions. Because only one other similar entity exists in California, SCP must look to Marin Clean Energy for directly applicable model programs or it must invent its own. Therefore, the following recommendations for taking advantage of SCP require further analysis before implementation. Please note that the Climate Protection Campaign, in a parallel endeavor to this research paper, is analyzing possible programs to optimize SCP.\textsuperscript{12}

Recommendation 1.1  Optimize Sonoma Clean Power to significantly and rapidly reduce GHG emissions

\textit{Discussion:}  Because Sonoma Clean Power (SCP) has decision-making authority over sources of electric power generation it can purchase 100 percent renewable power. However, to maintain its customer base, SCP must compete with PG&E. Given the early success of SCP to negotiate competitive rates, and given the rapid drop in the cost of solar energy, a goal of 100 percent renewable electric power may soon be attainable through SCP. Other communities such as Palo Alto and Washington D.C. that are now moving toward 100 percent renewable power provide inspiration for this.

SCP also has an opportunity to create energy efficiency, demand management, and financing programs for its

\textsuperscript{11} For the 2008 Sonoma County Community Climate Action Plan, a carbon model was developed to analyze candidate measures. The package of measures to achieve Sonoma County’s 25% GHG emission reduction goal described in the plan was based on the analysis using the carbon model.

customers to further leverage its ability to reduce emissions. The optimization of SCP will also create competition among power generators, allow local control over the stationary power supply, help to control rates over the long term, and stimulate local job growth as more local renewable energy generators come online.

Examples:

- PaloAltoGreen has 100 percent California-produced solar energy which has reduced emissions dramatically.\(^{13}\)
- Washington D.C. has a 100 percent renewable energy mix, largely from a regional wind farm.\(^{14}\)
- The City of Houston purchased over 140 megawatts of renewable power, the largest purchase of solar energy in the nation to date. This purchase is projected to account for half of Houston’s annual electricity demand. Houston also purchased $2 million of renewable energy credits.\(^{15}\)

**Recommendation 1.2 Support local renewable energy development by considering a reduction in solar permitting fees, using online permitting, and that all new developments install solar**

*Discussion:* In Sonoma County solar and energy efficiency professionals, local government building inspectors, and fire safety officials have created a groundbreaking solar permitting process. Solar companies can now use the same permit application for residential solar projects anywhere in the county, and building officials all over the county follow the same standardized solar permitting guidelines.\(^{16}\) However, Solar Sonoma County (SSC) recommends taking these revisions even further by moving to online permitting. SSC estimates that online permitting would save approximately $800,000 annually.\(^ {17}\) Sonoma County can also consider charging solar permit fees based on cost recovery or eliminating fees altogether. The savings from moving permitting online could be applied toward the losses from reduced permitting fees. Sonoma County jurisdictions can go farther by following the City of Sebastopol’s example and requiring new development to install solar.\(^ {18}\)

**Recommendation 1.3 Integrate local renewable energy development, energy efficiency, demand response, intelligent grid management, and financing**

*Discussion:* Sonoma County should move toward using smart and micro grid technologies for demand response and energy efficiency in combination with renewable energy power generation at optimum locations to minimize fossil fuel use and its associated costs, both fiscal and ecological. Findings from the Renewable Energy Secure Sonoma County (RESCO) project support this recommendation. The RESCO project assessed Sonoma County’s energy needs and available renewable energy supply, evaluated approaches to integrate demand and supply, and developed a model for a local, cost-effective renewable energy portfolio that would help Sonoma County meet its GHG reduction goals.\(^ {19}\)

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14 Survey
17 Ibid
Examples:

- “FortZED” is an effort to transform the downtown area of Fort Collins, Colorado, into a net-zero energy district through energy conservation, energy efficiency, renewable energy, and other smart grid technologies. Phase I of the project was research-oriented. Phase II of the project aimed to demonstrate the operation of a micro-grid and the use of advanced cyber security safeguards to protect the micro-grid.
- A field test in 2009 of a smart grid demonstration project involving five buildings at the Marin County Civic Center successfully coordinated and optimized large-scale renewables on the electric grid.
- Joint Venture’s “Smart Energy Enterprise Development Zone” (SEEDZ) initiative aims to build the smart energy network of the future by uniting local energy customers, solution providers, municipalities, institutions and utility interests. The initiative aspires to high power reliability, quality, affordability and sustainability. The SEEDZ zone spans north Sunnyvale, north Mountain View, and Moffett Field. Between now and 2020, SEEDZ collaborators envision building out the country’s highest-performance two-way power network, supporting and rewarding active energy management and clean distributed generation on a sustainable economic scale.

2.0 Energy Efficiency

Introduction: Over 30 percent of Sonoma County GHG emissions are associated with energy use in buildings. Consequently, Sonoma County must include measures to increase building energy efficiency as part of its climate protection efforts. According to the U.S. Environmental Protection Agency, “Energy efficiency should be a cornerstone of energy and/or climate policies at all levels of government, based on its proven status as a cost-effective option for reducing carbon dioxide emissions and reducing the cost of climate policies.”

Recommendation 2.1 Identify and implement best practices for aggressively increasing the energy efficiency of buildings

Discussion: Even the most highly regarded energy efficiency programs are not producing results to the degree needed. Therefore, further research of energy efficiency best practices is recommended. Research is a relatively low-cost upstream investment compared with the investment ultimately made on energy efficiency programs. Given that substantial energy efficiency funding is expected to come through Sonoma Clean Power, comprehensive and pro-active research can provide data-backed confidence that funds will be well spent.

Recommendation 2.2 Expand and strengthen energy use disclosure requirements

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20 http://www.rmi.org/summer_2013_esj_whats_old_is_new_main
21 http://fortzed.com/what-is-fortzed/energy-technology
26 This recommendation is directed toward learning from others’ research of energy efficiency best practices and not toward original research.
Discussion: California law now requires energy use disclosure prior to sale, lease, or financing of a nonresidential building.26 This requirement can be expanded to the residential sector. Water use disclosure should be included in any energy use disclosure requirement given the embodied energy in water use. With knowledge about the energy performance of a building, buyers will know the operating costs of any buildings they are considering for purchase. Such information should make energy efficient buildings more valuable thereby creating more demand for such buildings and prompting owners to make energy efficiency upgrades to their buildings.27 Disclosure requires assessment of building performance, and according to a recent finding by the U.S. Environmental Protection Agency, assessment of buildings leads to energy efficiency improvements.28

The most important aspects of energy use disclosure laws include:

1. Enforcement approach
2. Definition of the amount of square footage of buildings affected (for example, >50k sq ft)
3. Frequency of disclosure (annually/ every 5 years/ only at time of sale?) and the level of disclosure (just a benchmark or a full audit?)
4. Deadlines for the various requirements; if they are too distant they are meaningless.
5. Whether or not to include water usage
6. Whether or not to require mandatory rating

Examples:

- Austin’s Energy Conservation Audit & Disclosure Ordinance provides efficiency information to home buyers, apartment renters, and building owners to reinforce the value of energy efficiency. The ordinance affects properties located in the Austin city limits that receive electricity from Austin Energy.29
- Austin’s third-party testing requirement has improved compliance with residential energy codes. The city used private sector technical expertise to design the testing.30
- The City of Berkeley, which has had a Residential and Commercial Energy Conservation Ordinance (RECO/CECO) for years, is now switching to an energy use disclosure ordinance for single-family, multi-family, and commercial properties. The ordinance will be modeled after pieces of ordinances from Boston, New York City, Chicago, and Seattle and is expected to yield greater energy savings. Berkeley opted for this change because the required measures under their RECO/CECO are out of date and the energy code requirements exceed those measures. In addition, the City won’t have to update the ordinance continually to keep up with technology and state policy changes. The new ordinance aims to be more nuanced than the RECO/CECO was, and it will not trigger permit requirements, which vexed building owners and realtors.31
- The City of Boston’s Building Energy Reporting and Disclosure Ordinance (BERDO) requires Boston’s large- and medium-sized buildings to report their annual energy and water use to the City of Boston after which the City makes the information publicly available. In addition, every five years buildings need to complete an energy assessment or energy action. Exemptions are provided for buildings that are already efficient or are making significant progress on energy efficiency.32

29 http://www.aceee.org/sector/local-policy/case-studies/austin-energy-con
30 Page 87 of ACEEE’s 2013 City Energy Efficiency Scorecard: http://www.aceee.org/research-report/e13g
31 Phone call with Timothy Burroughs at the City of Berkeley on May 20, 2014.
32 http://www.cityofboston.gov/ecos/reporting/
The City of San Francisco has a Benchmark and Audit Ordinance whereby non-residential buildings must benchmark energy use every year and get an energy audit every five years. This allows decision-makers to compare performance to other buildings.  

Recommendation 2.3 Develop a commercial commissioning / retro-commissioning program

Discussion: Commissioning is a process that ensures that a new building operates as efficiently as the designer intended and that building staff operate its systems and equipment properly. It is an intensive quality assurance process for buildings that begins during design and continues through construction, occupancy, and operations. Retro-commissioning mirrors a similar process for existing buildings. Retro-commissioning can resolve problems that occurred during design or construction, or address problems that have developed throughout the building’s life.

According to a report by Lawrence Berkeley Lab, commissioning and retro-commissioning of commercial buildings are potentially the most cost-effective strategies for reducing energy, costs, and GHG emissions in buildings today. Retro-commissioning a few large buildings (likely commercial) is more cost effective than retro-commissioning many small ones (likely homes). Furthermore, commercial building owners are more apt than home owners to view energy efficiency retrofits as a business decision and thus implement cost-saving measures.

Some places are better suited for mandatory commercial energy efficiency ordinances, for example, Manhattan where the location is so desirable that businesses are highly motivated to stay despite extra energy efficiency requirements. In contrast, if Sonoma County adopted tough energy efficiency mandates it might drive businesses away, thus causing “leakage” of emissions to other communities. Such leakage merely moves emissions elsewhere rather than reducing them. The key may be to create commercial hubs that are so unique and attractive to businesses that mandated upgrades become an accepted up-front cost for businesses and a welcome long-term savings. Voluntary financing programs that feature no up-front cost for energy upgrades and guarantees for savings may succeed where mandatory programs would not.

Examples:

- New York City’s Energy Audit & Retro-commissioning Ordinance mandates that buildings over 50,000 gross square feet undergo periodic energy audit and retro-commissioning measures as part of the Greener, Greater Buildings Plan.
- In January 2010 the City of Seattle passed the Energy Disclosure Ordinance. It requires large commercial and multi-family property owners in Seattle to annually benchmark energy use and provide the City with ratings to allow comparison across different buildings. Building owners are also required to share energy usage and ratings with prospective buyers, tenants and lenders upon sale, lease or financing of properties.
- Southern California Edison’s commercial retro-commissioning program called RCx offers financial incentives to SCE customers for their retro-commissioning projects. SCE asserts that RCx typically saves

34 http://cx.lbl.gov/definition.html
owners up to 15 percent of annual energy costs and has a low simple payback from energy savings, averaging two years or less.\textsuperscript{38}

**Recommendation 2.4 Use public-private partnerships such as performance contracts for municipal buildings**

*pDiscussion*: Municipalities control buildings and infrastructure that consume significant amounts of energy. Municipalities often lack the upfront capital to conduct energy audits and invest in needed energy efficiency upgrades. By utilizing public-private partnerships such as performance contracts, the municipality can make upgrades, save money, avoid upfront costs, and lead by example.\textsuperscript{39}

*Examples:*

- Massachusetts, Connecticut, and New York City implemented Open Market ESCO, a $9 million pilot program that will finance energy-efficient retrofits for an estimated 1,200 units of low-income housing and allow property owners to pay for the upgrades through reduced energy costs. The Open Market ESCO program is establishing a network of qualified subcontractors and professionals to conduct all work.\textsuperscript{40}
- New York City used $37 million of its ARRA funding to establish a new financing agency called the NYC Energy Efficiency Corporation (NYCEEC), an independent, non-profit financial corporation whose goal is catalyzing the development of a market-driven energy efficiency retrofit industry.\textsuperscript{41}
- The City of Houston awarded Siemens Industry, Inc., a multi-phase performance contract for 5.5 million sq. ft. of buildings. Upgrades included a solar thermal collector system, lighting upgrades, ballpark and outdoor field lighting, and HVAC efficiency improvements. Anticipated annual savings include more than 8,800,000 kWh electricity, 960 MMBtu natural gas, 57,440 kgal water, 9,267,208 pounds GHG, operational savings of $907,665, and an excess of $30 million over the 13-year contract.\textsuperscript{42}

**3.0 Transportation and Land Use**

*pIntroduction*: Transportation produces over 50 percent of Sonoma County’s GHG emissions and therefore plays a critical role in Sonoma County’s portfolio of GHG reduction strategies. However no easy, effective local solutions exist for tackling emissions in this sector. Nonetheless, there are measures that Sonoma County can pursue, even if challenging.

\textsuperscript{38} http://www.sce-rcx.com/
\textsuperscript{39} Government Code 4217 allows a public entity to enter into and deliver a public energy efficiency project by permitting the award of public contracts going through formal public bidding, thus saving the costs of that process which often exceed $100,000. https://www.acia.com/ACIA-News/Inspector-Magazine/Energy-Drives-our-Society.html
\textsuperscript{40} http://www.nyceec.com/wp-content/pdf/OpenMarket%20ESCO%20Press%20Release.pdf
\textsuperscript{41} www.nyceec.com
Recommendation 3.1 Accelerate the electrification of the transportation sector

Discussion: Sonoma County already has momentum toward this recommendation having been recognized as the “Most EV-Ready Community in 2011” by the Bay Area Climate Collaborative. The County’s efforts to support electric vehicles (EVs) resulted in an estimated 130 chargers for fleet and public use throughout the County by the end of 2012.

Sonoma Clean Power, because of its unique access to customers and its rate-making authority, is poised to accelerate the proliferation of both low-carbon electricity use and the vehicles that can use that clean electricity. It could offer information about electric vehicles in customer bills and offer rebates for charging stations. EV manufacturers could share the cost of this printed collateral as part of their marketing budget. Sonoma Clean Power is currently evaluating these and other prospective programs to advance EV adoption.

Example:

- Austin Energy offers residential customers and EV owners a rebate of 50 percent of the cost of the purchase and installation of a Level 2 Charging Station up to a maximum of $1,500.

Recommendation 3.2 Expand Transportation Demand Management programs

Discussion: Not only does transportation produce the majority of Sonoma County’s GHG emissions, it also consumes 24 percent of a typical Sonoma County family’s income, the highest of any Bay Area county.

Transportation Demand Management (TDM) offers the ability to save money and time for many Sonoma County commuters while meeting goals such as reducing GHG emissions and keeping growth of vehicle miles traveled in check. According to experts, comprehensive TDM programs that include a variety of individual strategies can make a major contribution to solving transportation problems. “TDM is limited by its institutional and political acceptance, not by its technical feasibility or cost effectiveness.”

Examples:

- Boulder, Colorado, has held vehicle miles traveled (VMTs) at 1994 levels for many years and recently began reducing VMT below 1994 levels. Such reductions were achieved while population increased 18 percent between 1990 and 2010. Likely causes for this are Boulder’s measures to control sprawl coupled with its incentives and support for travel by bus and bike.
- Santa Barbara, California, is similar to Sonoma County in population size and a Highway 101 north-south corridor. In 1991 the County started Traffic Solutions, a program that offers a number of TDM programs. Overall Santa Barbara’s share of single occupancy vehicles is nearly 9 percent below Sonoma County’s.

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45 http://www.austinenergy.com/about%20us/Environmental%20Initiatives/Plug-In%20Partners/drivers.htm
46 http://htaindex.cnt.org/map/
47 "Why Manage Transportation Demand?" VTPI: http://www.vtpi.org/tdm/tdm51.htm
48 goboulder.tumblr.com/
52 http://www.trafficsolutions.info
Recommendation 3.3 Require that growth in new and existing developments be zero-carbon, i.e., energy efficient and renewable energy generating, city-centered, walkable, bikable, transit-oriented, and mixed-use

Discussion: Compared with all other California counties, Sonoma has more roads per capita and is also the most parcelized. These two conditions perpetuate sprawl and fight against transit-oriented development. Working in its favor, Sonoma County will soon have SMART, the Sonoma Marin Area Rail Transit, a new train around which mixed-use compact development can occur. Furthermore, all the cities of Sonoma County have Urban Growth Boundaries. To reduce transportation-related GHG emissions over the long term, Sonoma County must implement land use policies that facilitate lifestyles with very low annual vehicle miles travelled per capita. These policies include implementing transit-oriented development, rezoning areas for mixed-use redevelopment, planning for healthy neighborhoods, exploring transportation access plan agreements, and investigating a transfer of development rights program.

Examples:

- The City of Chicago passed an ordinance to accelerate denser, less car-dependent development near transit stations. For commercial and mixed-use properties located near transit, the ordinance eliminates minimum parking requirements and offers density bonuses, allowing for smaller dwelling units and taller buildings. Studies have shown real estate sales prices in Chicago near transit outperformed the region by 30 percent.53
- The County of Montgomery, Maryland, has one of the most successful transfer of development rights (TDR) programs; they’ve protected 52,000 acres with TDRs, despite severe development pressure.54
- King County, Washington, plans to preserve one million acres, despite doubling its population. Local governments may not use redevelopment funds unless they have a TDR program.55
- The City of Portland, Oregon, used the concept of complete neighborhoods in its chief planning document. Goals, guiding policies, actions, and performance measures promote business vitality, access to housing, promoting vibrant neighborhood hubs, developing neighborhood greenways, and coordinating planning and investments among public and private entities.56
- The City of Boston has a complete streets program which aims to put pedestrians, bicyclists, and transit users on equal ground with drivers, and promotes a vision of streets that are safe, attractive, and conducive to healthy, active transportation.57 In addition, the City of Boston has a long-term transportation plan which includes off-street maximum parking ratios, transportation demand management requirements for new developments, the foundation of a bicycle-lane network, and a slate of public transportation projects.58
- St. Lucie, Florida, amended its comprehensive plan to preserve the rural character of its agricultural area while providing for future growth. Using principles of traditional neighborhood design, the strategy for new development requires a mix of uses, building types and income levels as well as a pedestrian-friendly block and street network.59

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53 Aaron Joseph LEED AP, Deputy Sustainability Officer, Office of the Mayor, City of Chicago
54 Conversation with Rick Pruetz of Smart Preservation, September 3, 2013
55 Conversation with Jeremy Criss, County of Montgomery, October 4, 2013
58 Ibid
59 http://www.stlucieco.gov/planning/tvc.htm
Recommendation 3.4  Prioritize funding for active (non-motorized) modes of transportation

Discussion:  To reduce emissions, improve air quality, and enhance public health, Sonoma County must change its spending priorities by moving funding away from projects that increase GHG emissions and towards those that reduce emissions, especially projects that support walking and cycling. By doing so, Sonoma County could, for example, implement more of its Bicycle and Pedestrian Plan, which now lacks sufficient funding.60

Examples:

- Minneapolis, Minnesota, is known as the best bike city in the U.S. Its Midtown Greenway is a 5.5-mile bicycle highway through the center of town which follows a sunken rail corridor with no major breaks in traffic and almost entirely separate from pedestrian traffic. The Greenway is plowed in the winter, lit at night, equipped with emergency call boxes, police patrols, and its own suspension bridge.61
- More than 500 cities around the world have started public bike shares.62 Montreal, Canada, has a self-service bike rental program, the largest in North America with 5,000 bikes, 400 docking stations, and 3.3 million trips in 2010. The program has expanded to Toronto.63 The City of Chicago’s bike sharing program called Divvy has 4,000 bikes and 400 stations. Chicago’s Department of Transportation owns all bikes, stations, and vehicles. Chicago’s Streets for Cycling 2020 plan calls for a 645 mile bikeways network by 2020.64

4.0 Solid Waste

Introduction:  GHG emissions produced from the solid waste sector account for less than 2 percent of Sonoma County’s total GHG emissions.65 Methane from the decomposing organic portion of solid waste is the largest producer of emissions in this sector. As organic material buried in the landfill decomposes it turns into methane, a greenhouse gas approximately 25 times more potent than carbon dioxide. Sonoma County residents and businesses generate a significant amount of solid waste for which they pay a considerable amount for disposal, suggesting that there is ample room for reducing emissions and saving money in this sector.66, 67

For many years Sonoma County has curbed the amount of solid waste it landfills. This effort has resulted in the diversion of over 60 percent of the county’s solid waste to composting and recycling markets through “blue can” and “green can” source separation.68 Although Sonoma County is known for its success in diverting solid waste from the landfill, it can do better, as other communities are demonstrating.
**Recommendation 4.1 Work toward zero waste by maximizing recycling, composting, and diversion of organic material from the landfill**

*Discussion:* Zero waste is the ultimate goal for reducing emissions and saving money in the solid waste sector. Many communities now are working toward this goal. With zero waste, all organic materials that would typically be buried and produce methane are instead harvested for their highest and best use – as compost or as an energy source. Non-organic materials are recycled, reducing the need to continually mine and refine virgin resources for product production, and thus, reducing energy use and emissions. As part of this, construction and demolition debris is recycled, spurred by a Construction and Demolition (“C&D”) ordinance that uses a deposit system in conjunction with certified facilities.

*Examples:*

- San Francisco is committed to zero waste by 2020.\(^69\) Total emissions from waste have decreased 33.4 percent since 1990 as more materials have been recycled and composted. The city’s current landfill diversion rate is 80 percent.
- The City of Vancouver in Canada also has a goal to achieve zero waste.\(^70\)
- The Oakland City Council adopted a zero waste goal in 2006, calling for a 90 percent reduction in waste sent to landfill by 2020.\(^71\)
- In San Diego, on July 1, 2008, the Construction and Demolition (C&D) Debris Deposit Ordinance took effect, requiring that the majority of construction, demolition and remodeling projects requiring building, combination and demolition permits pay a refundable C&D Debris Recycling Deposit and divert at least 50% of their debris by recycling, reusing or donating usable materials.\(^72\)

**Recommendation 4.2 Capitalize on emerging opportunities to convert waste into energy**

*Discussion:* Sonoma County’s Central Landfill uses a methane capture system. Because these systems do not capture all the methane being emitted, some goes into the atmosphere. To further reduce emissions from solid waste, organic material now being landfilled could instead be processed in an anaerobic digester to make biogas. This management system would provide carbon-free energy that can displace fossil fuel.\(^73\)

*Examples:*

- The City of San José has recently started processing all of the City's commercial organic waste using the first commercial scale dry fermentation anaerobic digestion and in-vessel composting facility in the U.S.\(^74\)
- Junction City outside Portland, Oregon, is building a $4 million biogas facility. It will compost organic waste such as food scraps, straw, and manure to generate methane that will be collected and burned to power a turbine and produce electricity.

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\(^69\) Email from Calla Ostrander on 11/1/13, SF Environment. See also [http://www.sfenvironment.org/zero-waste](http://www.sfenvironment.org/zero-waste).
\(^71\) Scott Wentworth, City of Oakland (survey response)
\(^73\) Email from Dave Erickson, California Public Utility Commission, August 28, 2013
5.0 Agriculture and Forestry

Introduction: Sonoma County’s forestry and agricultural sectors provide opportunities to sequester carbon. Preserving and expanding forests and agricultural lands protect Sonoma County’s iconic beauty as well as the climate. Sonoma County voters created and continue to support the Agriculture Preservation and Open Space District that has protected over 106,000 acres from development resulting in carbon sequestration, avoided emissions from habitat removal, and from avoided vehicle miles traveled. Additional lands have been protected by Sonoma County Parks, Sonoma Land Trust, and other non-profit organizations. Programs that encourage farmers and ranchers to follow sustainable practices help sequester carbon in soils and plants as well as reduce methane emitted by livestock and manure.75 Research currently underway, notably that of the Sonoma County Agriculture Preservation and Open Space District’s Climate Action through Conservation project, are likely to identify actions that will have a big impact on the reduction of GHG emissions in this sector.

Recommendation 5.1 Support agricultural practices that increase carbon sequestration

Discussion: Sustainable agricultural practices increase the ability of the land to sequester carbon while enhancing other ecosystem services such as improved fertility, and improved soil and water quality. A big recent boost for action came from the Sonoma County Winegrape Commission that announced Sonoma County’s commitment to becoming the nation’s first 100 percent sustainable wine region.76 This commitment will inspire others in the agriculture sector to follow suit. Sonoma County could tap its academic institutions, Sonoma State University and Santa Rosa Junior College, as well as the many innovative local farmers and ranchers for assistance in promoting sustainable farming and ranching practices.

Examples:

- The Marin Carbon Project seeks to demonstrate the capability of local rangelands to sequester carbon. The project is a collaboration of UC Berkeley, UC Davis, UC Cooperative Extension, Marin Organic, Marin Agricultural Land Trust, Marin Resource Conservation District, the USDA Natural Resources Conservation Service, and Nicasio Native Grass Ranch. Preliminary results of levels of carbon in test rangeland soils are very promising. The Marin Carbon Project intends to help ranchers and rangeland managers maximize financial compensation as a result of sequestering carbon.77
- Washington State University Extension provides technical assistance to Snohomish County farmers to teach farmers practices that reduce fuel consumption. WSU is also developing a “Sustainable Lands Strategy” that balances the preservation of farmlands with habitat restoration objectives.78

76 http://www.sonomawine.com/blog/sonoma-county-become-nations-first-100-sustainable-wine-region
77 http://www.marincarbonproject.org/
**Recommendation 5.2 Support forestry practices that increase carbon sequestration**

*Discussion:* Many of Sonoma County’s forests and orchards have been cut to make way for vineyards and suburban development. A reversal of this trend will be imperative to maximize carbon sequestration while creating co-benefits such as restoring wildlife habitat, reducing urban heat island effects, and improving local air and water quality. Sonoma County already has experience preserving lands for carbon sequestration. Buckeye Forest, formerly known as Preservation Ranch, is part of The Conservation Fund’s North Coast Forest Conservation Initiative. Threatened by development and vineyard conversion, the Conservation Fund purchased the nearly 20,000-acre property so that the land could be managed sustainably for timber, carbon sequestration, and restoration of coho salmon habitat.  

In addition to preserving wild lands, planting new trees, especially in suburban settings, will also sequester carbon and offer co-benefits, including providing shade to reduce the need for air conditioning, improving air and water quality, and mitigating the urban heat island effect.

- The Arcata Community Forest, established in 1955, is comprised of 2,350 acres of second growth redwood forest in Humboldt County. The forest generates money through its carbon offset program in partnership with Terrapass.
- New York City has a goal of planting one million trees, which will increase its urban forest by 20 percent. The City will plant 70 percent of the trees in parks and other public spaces. The other 30 percent will come from private organizations, homeowners, and community organizations.
- The City of Philadelphia aims to increase tree coverage to 30 percent in all neighborhoods by 2025.
- The City of Portland has a goal to expand the urban forest canopy to cover one-third of Portland, and at least 50 percent of total stream and river length in the city meet urban water temperature goals as an indicator of watershed health. Over 7,000 trees were planted in Portland in 2011 through a variety of programs, including partnerships with Friends of Trees and the Youth Conservation Crew. The City’s Neighborhood Tree Stewards Program (a volunteer training course) provided participants tools and knowledge to lead urban forestry projects.
- Sacramento’s Greenwise Action Plan has a goal of planting 5 million trees by 2025. To reach that goal, 3 million trees will need to take root by 2020. Progress will be reported using a counter on the Sacramento Tree Foundation website.

**6.0 Financing and Fees**

*Introduction:* The aforementioned energy efficiency and renewable energy projects will not happen without powerful financial tools to support them. Financing and fees are pivotal to the success of Sonoma County’s GHG reduction measures.

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81 [http://www.milliontreesnyc.org/html/about/about.shtml](http://www.milliontreesnyc.org/html/about/about.shtml)


85 Page 31 of the Greenwise Sacramento Regional Plan: [http://uptownstudios.net/greenwise/](http://uptownstudios.net/greenwise/)
**Recommendation 6.1 Use proven and develop new financing mechanisms to accelerate implementation of recommended measures.**

_Discussion:_ Three financing solutions were highlighted in Sonoma County’s Community Climate Action Plan issued in 2008: AB 811 – Property-Assessed Clean Energy (Sonoma County Energy Independence Program), Pay As You Save® (an on bill repayment program), and Community Choice Aggregation (Sonoma Clean Power). All three are being implemented in Sonoma County. In addition, Sonoma County is currently in the beginning stages of implementing the Sonoma County Efficiency Fund, another innovative financing solution for buildings.

Crowd-funding is an emerging financing mechanism for aggregating many small investments via an online platform. Companies like Mosaic are using this approach to finance renewable energy projects. Sonoma Clean Power may be able to use crowd-funding to support local energy development. Collaborating with firms that aggregate capital for renewable energy projects may be an avenue for Sonoma County to attract new businesses and jobs.

Carbon taxes and fees, although less common particularly at the local level, may have a place in reducing GHG emissions. These can have the dual benefit of creating an ongoing revenue source for climate protection while creating a disincentive to engage in carbon-intensive behaviors. The County of Sonoma has explored the concept of a mitigation fund to accept fees from developers unable to meet CEQA requirements for GHG emissions. Another means for taxing carbon would be for Sonoma County jurisdictions to tax excessive energy use.

_Examples:_

- In Boulder, Colorado, citizens voted to tax themselves based on the amount of electricity consumed, and use the revenue to fund climate protection efforts. In 2010 the tax generated approximately $1.8 million.  
  [86](#)
- The City of Arcata, California, in November 2012 passed a measure to levy a tax on excessive electricity use in residential households – primarily from indoor marijuana grow operations. The goal of the tax is to help meet its GHG emission reduction goals, to align with emerging California energy policy, and to create a disincentive for excessive energy use.  
  [87](#)

**7.0 Tracking progress and building awareness and support**

_Introduction:_ Achieving a goal usually entails accountability based on measuring progress, especially for a large scale endeavor such as climate protection. Policymakers, community stakeholders, and implementers must know the goals, the current status, the way forward, and the responsible parties in meeting those goals. This ensures the support required to reduce emissions at the speed and scale that is commensurate with solving the climate crisis.

**Recommendation 7.1 Measure and report Sonoma County’s progress toward its climate protection goals**

_Discussion:_ To ensure accountability for producing targeted emission reductions and to build community awareness and support for climate protection, Sonoma County could consider development of a systematic approach for tracking and recognition of performance. Tracking might also include a consumption-based inventory, which has

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87 [http://www.cityofarcata.org/node/1645](http://www.cityofarcata.org/node/1645)
been done by the State of Oregon and the greater metropolitan area of Portland. The Climate Protection Campaign has measured and reported Sonoma County’s annual progress toward its 25 percent GHG reduction goal for most of the past decade; one year the RCPA did as well. Examples of inspiring progress reports produced by other communities could inspire similar reports in Sonoma County.

Examples:

- Vancouver reports progress using a matrix by sector including goal, target, indicator, baseline, current year, percent change improved over baseline, highest priority actions, and percent complete.88
- New York City provides a progress report that includes very specific actions with measurable results and the status of each milestone arranged by sector.89
- Portland has an update with a color-coding system showing the progress of actions by sector.90
- Berkeley has an online progress report broken down by sectors showing graphs that compare current emissions with what is needed to meet goals.91

Recommendation 7.2 Build Sonoma County’s awareness and support for climate protection

Discussion: At present there is no forum in Sonoma County to showcase exemplary action and to acknowledge responsible individuals, governments, businesses, and other entities. Doing so would support them as well as be an inspiration to others. Such a forum can also bring the community together and build awareness and alignment for climate protection. Speakers could present key concepts and priorities.

Examples:

- From 2003 to 2012 a consortium of government, business, and community partners in Sonoma County organized “Climate Protection: Everybody Profits,” an annual, daylong event attended by about 150 people each year. The conference was the forum where the community’s progress was reported.
- During Boulder’s community forum, the senior environmental planner exhorted the audience saying, for example, “You can’t conserve your way out of the problem—we must also dramatically transform energy source,” and “Individuals alone can’t change systems—system change requires collective action.”92
- In 2011, Multnomah County held a Climate Short Film Contest as part of its quarterly Sustainability Film Series. Community members told stories about local impacts of climate change through short, engaging videos. Winning films were featured at an event in July 2011 that spurred community and media interest in the film contest and issues surrounding climate change.93
- Twice a year, the City of Portland invites diverse community organizations to apply to host the ReTHINK workshop series and then conduct a community action project. The first workshop builds a basic understanding of climate change. The second and third workshops map back to the four action areas of the Climate Action Now! campaign. The City then grants the organization up to $1,500 to conduct a community action project linked to at least one of the climate action areas.94

90 http://www.portlandoregon.gov/bps/article/393345
91 http://www.ci.berkeley.ca.us/climateprogress/
92 http://www.boulderblueline.org/2013/10/10/can-boulder-reduce-its-ghg-emissions-by-80/
94 Ibid
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Appendix A: Renewable Energy

Introduction

Sonoma Clean Power (SCP) promises to be a powerful, game-changing innovation platform that provides significant opportunity for rapid GHG emissions reductions. Because only one other similar entity currently exists in California, SCP must look to Marin Clean Energy for directly applicable model programs or it must invent its own. The following recommendations for taking advantage of SCP require ongoing analysis. The Climate Protection Campaign, in a parallel endeavor to this research paper, is investigating programs to optimize SCP.¹

Key Recommendations:

<table>
<thead>
<tr>
<th>Recommendation</th>
<th>Communities Employing Recommendation</th>
<th>Sonoma County Status and Applicability</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1 Optimize Sonoma Clean Power to significantly and rapidly reduce GHG emissions</td>
<td>Marin County</td>
<td>Sonoma Clean Power was established in July of 2013. The first group of 20,000 customers began receiving service in May 2014, and most people will be eligible starting in early 2015.</td>
</tr>
<tr>
<td>1.2 Support local renewable energy development by reducing solar permitting fees, using online permitting, and requiring that all new developments are solar-ready</td>
<td>Anaheim, Berkeley, Boston, Boulder, King County, Montgomery County, Sacramento, San Francisco, Santa Monica, Silicon Valley</td>
<td>Solar Sonoma County has done considerable work to improve codes and standards and make Sonoma County a national leader. The City of Sebastopol passed an ordinance to require that all new developments are solar-ready.</td>
</tr>
<tr>
<td>1.3 Integrate local renewable energy development, energy efficiency, demand response, intelligent grid management, and financing</td>
<td>Chicago, Fort Bragg, Fort Collins, Germany, Junction City, Los Angeles, Marin County, Portland, San Jose, Silicon Valley, Vancouver, Washington D.C., Weld County</td>
<td>Sonoma County must use smart and microgrid technologies for demand response and energy efficiency in combination with renewable energy power generation at optimum locations to minimize fossil fuel use.</td>
</tr>
<tr>
<td>1.4 Continue to support current successful financing programs</td>
<td>NA</td>
<td>Sonoma County can use Property Assessed Clean Energy and Pay As You Save® financing to further its leadership.</td>
</tr>
</tbody>
</table>

Recommendation 1.1 Optimize Sonoma Clean Power to significantly and rapidly reduce GHG emissions

Background

Because Sonoma Clean Power (SCP) has decision-making authority over sources of electric power generation it can purchase 100 percent renewable power. However, to maintain its customer base, SCP must compete with PG&E. Given the early success of SCP to negotiate competitive rates, and given the rapid drop in the cost of solar energy, a goal of 100 percent renewable electric power may soon be attainable through SCP. Other communities such as Palo Alto and Washington D.C. that are now moving toward 100 percent renewable power provide inspiration for this.

SCP also has an opportunity to create energy efficiency, demand management, and financing programs for its customers to further leverage its ability to reduce emissions. The optimization of SCP will also create competition among power generators, allow local control over the stationary power supply, help to control rates over the long term, and stimulate local job growth as more local renewable energy generators come online.

Strategies to Consider:

A. Set a goal for Sonoma Clean Power to use 100 percent renewable power
B. Execute strategies already in Sonoma Clean Power’s Plan
C. Maximize solar on public buildings

A. Set a goal for Sonoma Clean Power to use 100 percent renewable power

Sonoma County has a bounty of renewable energy supplies to be tapped, including base load energy at the Geysers. The Geysers, located in the Mayacamas Mountains along 45 square miles of the Sonoma and Lake County border, are the largest complex of geothermal power plants in the world. In addition, solar and wind potentials in Sonoma County are far from realized to date. Setting and achieving a goal of 100 percent renewable energy is doable, as a few leading communities have demonstrated. The goal of 100 percent renewable energy can initially be met by purchasing renewable power wherever it is available, as well as by purchasing renewable energy credits when needed.

In June of 2013, the City of Houston signed an agreement with Reliant Energy, an NRG Energy company, to purchase over 140 MW of renewable power for the next two years, making the deal the largest purchase of solar energy in the nation to-date (although LA is now going to pass Houston). This purchase of green power is projected to account for half of its annual electricity demand. The City will be using almost 623,000 MWh of green power per year, which is equivalent to the amount of kilowatt-hours needed to power over 55,000 homes each year. This purchase put Houston as the largest municipal purchaser of renewable power in the nation, and in the top 10 overall in the nation, according to EPA estimates. The City of Houston has also purchased renewable energy credits

2 http://www.geysers.com/geothermal.aspx
(RECs) that are Green-E certified. Taking advantage of more cost effective and cost competitive REC prices, the City has maintained a relatively flat power price while also increasing its percentage of renewable energy in its portfolio. The City has committed $2 million for this 2-year agreement, less than a $0.01 per kWh on top of the City’s power price.  

In Oberlin, the city projects a 50 percent decrease in community emissions from 2007 by 2015, based on contracted renewable energy through their municipal utility (90 percent carbon-free energy in 2015, mostly landfill gas and hydropower).  

In Palo Alto, the PaloAltoGreen program supports 100 percent California-produced solar energy. Palo Alto was the first community in California to be certified as a Green Power Community by the U.S. Environmental Protection Agency. Now the City Council has voted to reconsider the best direction for the program, in light of the decision earlier this year for the City to only purchase carbon-neutral electric power for all customers. This action has brought down emissions dramatically for Palo Alto.  

In the City of Portland, installation of on-site renewable energy systems grew in 2011. In two years, the three-year Climate Action Plan goal of 10 megawatts of solar electric generation was exceeded. As of December 2011, there were 14.7 MW of total installed capacity. Installations by government agencies, businesses and local residents all contributed towards achieving this goal. The City supported two Solarize Portland campaigns in 2011, resulting in over 120 new solar system installations (2011), and over 570 installations since the program’s inception in 2009.  

Washington D.C. has a 100 percent renewable energy mix, largely from a regional wind farm.  

B. Execute strategies already in Sonoma Clean Power’s plan  

Sonoma Clean Power can be a game-changing innovation platform to help Sonoma County reduce GHG emissions. Four strategies for doing so are already included in the SCP Implementation Plan and should be executed.  

1. Net Energy Metering  

Customers with on-site generation eligible for net energy metering (NEM) from PG&E will be offered a NEM rate from SCP. NEM allows for customers with certain qualified renewable energy generation to be billed on the basis of their net energy consumption. SCP will pay customers for excess power produced from NEM generation systems in accordance with the rate designs adopted by the SCPA Board.  

2. Feed-in Tariff  

A feed-in tariff is a wholesale rate paid by a load serving entity for clean power fed into the grid at a guaranteed rate over a defined time period.  

Palo Alto CLEAN (Clean Local Energy Accessible Now) is a program to purchase electricity generated by solar electric systems located in CPAU’s service territory, which coincides with the city boundaries.
Programs like this, known in the industry as "feed-in tariff" programs, involve a utility paying a fixed price (tariff) for the power that is "fed into" their electric grid from local generation systems. On December 17, 2012 the Palo Alto City Council approved changes to Palo Alto CLEAN including raising the price, lowering the amount of capacity to be accepted and removing the minimum project size. CPAU is now offering to purchase the output of up to 2 MW of new solar systems located in Palo Alto at a price of 16.5 cents per kilowatt hour (kWh) for 20 years. There is no minimum or maximum project size.\(^\text{10}\)

In Los Angeles on January 11, 2013, in the nation’s most dramatic improvement among municipal utilities, the Board of Water and Power Commissioners (Board) approved a 100 MW FiT Set Pricing Program as the first component of a 150 MW FiT Program. LADWP’s 100 MW FiT Set Pricing Program seeks to encourage renewable energy development within the Los Angeles Basin and help meet the 33 percent Renewable Portfolio Standard mandate by 2020. The FiT Program will allow the LADWP to partner with program participants to purchase, under a standard power purchase contract, energy generated from a participant’s renewable energy generating system. These systems will be located within the LADWP's service territory and interconnected to the LADWP electrical distribution system. All the energy generated by these systems will be purchased at a fixed price, subject to time-of-delivery multipliers, for a term of up to 20 years.

The 100 MW FiT Set Pricing Program is the successor to the LADWP’s 10 MW FiT Demonstration Program which was approved by the Board on April 17, 2012 and launched on May 17, 2012. The Demonstration Program helped gauge market pricing and test the initial program’s structure. It restricted projects to solar energy systems between 30 kW to 999 kW. Projects under the Demonstration Program were selected under a bid pricing mechanism. LADWP received 26 applications totaling 7.2 MW, of which 14 were eligible for contract signing. The weighted average bid price of the 14 projects is $0.175/kWh.\(^\text{11}\)


Green Energy Pricing programs enable people who are willing to pay a special voluntary rate for a superior energy product. The product may be a higher proportion of renewable energy, or it may be for the purposes of funding new local renewable energy generation.

In Marin County, Marin Clean Energy’s Deep Green customers can purchase all of their power from non-polluting, renewable sources. It’s a voluntary program and it’s available right now - electricity customers in Marin County and Richmond can sign up today. The additional cost of Deep Green is just a penny more per kilowatt-hour than the Light Green rates. For the average residential customer, the additional cost of Deep Green is just $5 more per month. In 2012, wind resources from the Western U.S. were used to supply Deep Green power. The Power Content Label is updated periodically to reflect the most current locations of renewable energy generators. The Deep Green energy mix includes category 3 renewable energy certificates, which support the development of new renewable energy facilities in the western U.S. to reduce greenhouse gas emissions using the purchasing power of Marin and Richmond residents and businesses.\(^\text{12}\)

\(^{10}\) http://www.cityofpaloalto.org/gov/depts/utl/business/sustainability/clean.asp
\(^{11}\) https://www.ladwp.com/ladwp/faces/ladwp/partners/p-gogreen/p-ge-localrenewableenergyprogram?_afrWindowId=null&_afrLoop=205373241318813&_afrWindowMode=0&_adf.ctrl-state=fdrvb2r4_4%4003Ff_afrWindowId%3Dnull%26_afrLoop%3D205373241318813%26_afrWindowMode%3D0%26_adf.ctrl-state%3Dsj%59mxdq-4 and http://www.icleiusa.org/blog/icel-applauds-los-angeles-for-historic-increase-in-renewable-power
\(^{12}\) https://mcecleanenergy.com/deepgreen
In the **City of Austin**, GreenChoice is Austin Energy’s renewable energy program that allows customers to receive their electricity from 100 percent renewable energy sources (primarily Texas wind power). Austin's community goal is to derive 35 percent of their power from renewables by 2020.\(^\text{13}\)

In **Sacramento**, SMUD's SolarShares® allows both owners and renters to go solar. SolarShares is also 100 percent local with the solar farm located in the service area. When a resident joins SolarShares, a portion of the solar power produced at the local solar farm will be credited to their monthly SMUD bill. They get the benefit of solar energy without having to install solar panels on their home. Their monthly bills will be offset by a credit for the solar electricity they get each month, which reduces the amount they would otherwise pay for non-solar power – after the cost of their program participation is deducted. Participation costs generally run between $5 and $65 a month, depending on the customer’s typical energy use and the size of SolarShare that they choose.\(^\text{14}\)

In the **City of Seattle**, Green Up is Seattle City Light's voluntary green power program for residential and business customers. By enrolling in Green Up, customers purchase green power for a portion of their electricity use and demonstrate their support for wind power and other new renewable energy projects in the Northwest. The Green Up program is Green-e Energy certified and fulfills LEED\(^\text{TM}\) Project green power requirements. Through Green Up customers may also purchase green power for special events. When a customer joins Green Up, Seattle City Light buys electricity on their behalf from independent companies that produce energy from renewable resources in the region. Green Up also has sponsored more than 30 solar demonstration projects, including high-profile installations at Jefferson Park, Woodland Park Zoo and the Pacific Science Center. Residential customers may purchase green power in increments of 25 percent, 50 percent or 100 percent of their electricity use for $3, $6 or $12 per month. Business customers may participate at any level and earn Silver, Gold or Platinum Partner recognition based on their annual electricity (kilowatt-hour) use or purchase green power for LEED\(^\text{TM}\) credits.\(^\text{15}\)

4. **Virtual Net Metering (Retail Solar Cooperative)**

Virtual net metering, available for customers of California’s investor-owned utilities since mid-2012, allows electric load at multiple meters to be offset by solar generation at a single meter elsewhere, so long as all meters are behind the same utility service delivery point. This program expands solar opportunity for retail customers and multi-family housing facilities, which have traditionally been limited to generating electricity and offsetting load at a single electric meter.\(^\text{16}\)

With virtual net metering, multiple tenants at a property can share the electricity produced by a single solar energy system. This makes it easier for residential and commercial rental properties to reduce tenant utility bills and create a revenue stream for landlords. It also makes it simpler for condominium and tenancy in common owners to share the benefits of an onsite solar system. Tenants benefit from the solar electricity by receiving a credit directly on their bill. The system owner gives the utility a list of participating tenants, known as benefitting accounts, indicating the percentage of the system’s output to be credited to each tenant.\(^\text{17}\)

**C. Maximize solar on public buildings**

\(^{13}\)https://www.austinenergy.com/energy%20efficiency/Programs/Green%20Choice/faq.htm#question2  
\(^{14}\)https://www.smud.org/en/residential/environment/solar-for-your-home/solarshares/  
\(^{15}\)http://www.seattle.gov/light/Green/greenPower/greenup.asp  
The County of Sonoma is engaged in ongoing efforts to make municipal operations as sustainable as possible. However, Sonoma County still has a lot of municipal buildings where solar could be installed.

In the City of Benicia, a 10-site City Facility Solar Project (1.67MW) led to 604MTCO2 reduced (March 2012 - October 2013) at an estimated cost of $9 Million. The City contracted with Chevron Energy Solutions. The City tracks energy, GHG, and cost savings and maintains the systems.18

In the City of San Jose, approximately 4.3MW has been installed on municipal buildings (fire stations, community centers and libraries). All of the installations are privately funded through various means, including power purchase agreements.19

In Snohomish County, there are several public sites with solar panels that are generating electricity, including their largest 16.4kw system on the roof of the County Campus Administration Building. The County also has a 4.2kw solar system at their Cathcart facility, and a 1.2kw system at River Meadows Park in Arlington.20

**Recommendation 1.2 Support local renewable energy development by reducing solar permitting fees, using online permitting and by requiring that all new developments are solar-ready**

*Background*

In Sonoma County solar and energy efficiency professionals, local government building inspectors, and fire safety officials have created a groundbreaking solar permitting process. Solar companies can now use the same permit application for residential solar projects anywhere in the county, and building officials all over the county follow the same standardized solar permitting guidelines.21 However, Solar Action Alliance (SAA) recommends taking these revisions even further by moving to online permitting. SAA estimates that online permitting would save approximately $800,000 annually.22 Sonoma County should also consider charging solar permit fees based on cost recovery or eliminating fees altogether. The savings from moving permitting online could be applied toward the losses from reduced permitting fees. Sonoma County can go even further by requiring new developments to be solar-ready, which would give the local solar industry a much needed boost in a market that has always favored fossil fuels. The City of Sebastopol already passed an ordinance to require that all new developments are solar-ready.23 Other Sonoma County jurisdictions can do the same.

**Strategies to Consider:**

A. *Incentivize solar with reduced fees*
B. *Move to online permitting*

18 Survey
19 Phone call with Mike Foster at the City of San Jose, 10/15/2013
20 [http://www1.co.snohomish.wa.us/County_Services/Climate_Energy/](http://www1.co.snohomish.wa.us/County_Services/Climate_Energy/)
22 Ibid
23 [http://www.pressdemocrat.com/article/20130507/articles/130509624](http://www.pressdemocrat.com/article/20130507/articles/130509624)
C. Require solar on new developments (county-wide)

A. Incentivize solar with reduced fees

Sonoma County jurisdictions could charge solar permit fees based on cost recovery or eliminate fees entirely. Jurisdictions can develop fee rates that recover the costs of billable staff time and other resources expended while reviewing a permit or completing an inspection. Cost rates can also align the services rendered with the size and complexity of the system under review. This can differentiate between simple residential permit review and complex large commercial systems requiring significant personnel time to review. The California Legislature has also passed two bills – AB1801 and SB1222 – to prohibit excessive solar permit fees or base the costs of solar permits on the valuation of the PV system.

The Cities of Sacramento and San Francisco both use cost recovery fees.

The Cities of Santa Monica and Anaheim have taken this further and entirely eliminated solar PV permit fees to encourage solar installations in their region. 24

B. Move to online permitting

According to Solar Action Alliance (formerly Solar Sonoma County), online permitting will save an estimated $800,000 annually by eliminating all the paper and enabling building departments to track and archive permits electronically. In addition, online permitting will mean fewer driving trips for solar contractors and building inspectors, reducing vehicle emissions. 25 Solar Action Alliance is already working to make online permitting a reality and the County of Sonoma should support this effort.

The City of San Francisco now offers online permitting. 26

C. Require solar on new developments (countywide)

In May of 2013, Sebastopol became the second city in California to require solar power systems on new homes and commercial buildings. Lancaster was the first to make solar power mandatory on new housing developments. Sebastopol's ordinance will require new residential and commercial buildings and major additions and remodeling, to include a photovoltaic energy-generation system. The system will have to provide 2 watts of power per square foot of insulated building area or offset 75 percent of the building's annual electric load. In situations where solar power is impractical, such as shaded areas, new buildings may use other energy alternatives or pay a fee. 27

Recommendation 1.3 Integrate local renewable energy development, energy efficiency, demand response, intelligent grid management, and financing

27 http://www.pressdemocrat.com/article/20130507/articles/130509624
Background

An assessment of Sonoma County’s energy needs, the available renewable energy supply and approaches to integrate demand and supply was begun in 2009 with the “Renewable Energy Secure Sonoma County” (RESCO) project. The purpose of the RESCO project was to develop and demonstrate a model for a local, cost-effective renewable energy portfolio that would help Sonoma County meet its GHG reduction goals. The study indicated that Sonoma County must use smart and micro grid technologies for demand response and energy efficiency in combination with renewable energy power generation at optimum locations to minimize fossil fuel use and its associated costs – both fiscal and ecological. Financing is a key component of this approach and is discussed in further detail in the financing section.

Strategies to Consider:

A. Create net-zero energy districts
B. Pursue smart grid modernization
C. Consider a pilot program for energy storage
D. Use geographically-based energy strategies
E. Explore waste to energy opportunities

A. Create net-zero energy districts

Several cities within Sonoma County have downtown areas that may lend themselves to the creation of a net-zero energy district that would be extremely energy efficient and draw its remaining electricity needs from a diverse set of local renewable resources, such as wind, solar PV, and biomass. Such a district would first reduce energy demand and manage peak load and then invest in renewable energy and adopt smart grid technologies.

“FortZED” is an effort to transform the downtown area of Fort Collins, Colorado, into a net-zero energy district through energy conservation, energy efficiency, renewable energy, and other smart grid technologies. Phase I of the project was mainly research-oriented. Phase II of the project was slated to be completed in 2013, and aimed to demonstrate the operation of a micro-grid and the use of advanced cyber security safeguards to protect the micro-grid.

Details about FortZED follow.

Definitions of a net-zero energy district vary, but in the case of Fort Collins, UniverCity Connections envisioned a downtown district that becomes super energy-efficient and draws its remaining electricity needs from a diverse set of local renewable resources, such as wind, solar PV, and biomass. The FortZED

28 http://www.sonomaresco.org/
29 http://www.rmi.org/summer_2013_esj_whats_old_is_new_main
30 http://fortzed.com/what-is-fortzed/energy-technology
plan includes four strategic elements: 1) reduce energy demand, 2) invest in renewable energy, 3) manage peak load, and 4) adopt smart grid technologies.\textsuperscript{31}

The downtown area of Fort Collins represents 10–15 percent of the total electric demand in Fort Collins. The district covers two and a half square miles and serves about 6,000 customers, plus the main campus of Colorado State University. Fort Collins currently gets two-thirds of its electricity from coal-fired power plants, and five percent from renewables. Fort Collins electricity prices are 40 percent below the national average with triple the reliability as well as savings from energy efficiency.\textsuperscript{32}

The initial team that incubated the FortZED idea formed a steering committee with participants from the city government, the city’s municipal utility, and the Colorado Clean Energy Cluster, an organization made up of local cleantech companies dedicated to growing the cleantech industry across the state. The committee identified two large grants to kick-start efforts in FortZED. The first grant, from the State of Colorado, helped the city and its partners leverage $778,000 from the state to generate another $2 million in local matching funds that resulted in efficiency improvements to four large public buildings and the installation of a 54-kilowatt solar PV array on another building. The second grant put FortZED on the fast track to meeting its long-term aspirations. The committee, working closely with the municipal utility, landed $6.3 million from the U.S. Department of Energy (DOE) and $5 million from local matches. As part of a series of DOE projects called Renewable and Distributed Systems Integration (RDSI), Fort Collins Utilities set out to use the funding to build the connective infrastructure that allows electric demand and supply sources in the downtown area to communicate with one another and the utility. Using this new system to activate and manage solar PV, diesel generators, gas turbines, thermal storage, and load shedding from various demands, the utility demonstrated 20 percent drops in its peak electricity demand.\textsuperscript{33}

The first phase of the RDSI project, completed in 2011 with reporting extending into 2012, created the technology and communications infrastructure that will allow the downtown area to effectively integrate more sources of distributed electricity generation like solar PV. To carry out the project, the city and the utility established key public-private partnerships with local technology providers and major customers.\textsuperscript{34}

In 2010, the committee worked with several community members and the nonprofit The Atmosphere Conservancy to create the FortZED Community Energy Challenge. The Challenge is a grassroots effort to attract community members to take a pledge to reduce energy use in their homes; the Challenge has registered over 2,100 community members to date.\textsuperscript{35}

In November 2012, RMI’s e-Lab hosted a two-day charrette in Fort Collins to help the city’s leaders identify new opportunities to accelerate FortZED and the whole city’s move toward a clean energy future. The charrette resulted in two project ideas that are moving forward. In one, e-Lab is working directly with Fort Collins Utilities to explore changes in the utility’s customer offerings that could induce high levels of adoption for energy efficiency measures and solar PV. The potential changes being explored include innovative tariff designs, on-bill repayment of energy-related investments, and incentives that reflect the value of distributed energy resources. Together, e-Lab and Fort Collins Utilities are developing a small-customer energy services company (ESCO) structure that could deliver integrated packages of energy efficiency services, solar PV, and other options for the customer. In the second and complementary

\textsuperscript{31} http://www.rmi.org/summer_2013_esj_whats_old_is_new_main
\textsuperscript{32} Ibid
\textsuperscript{33} Ibid
\textsuperscript{34} Ibid
\textsuperscript{35} Ibid
project, RMI is developing a detailed, Fort Collins-level Reinventing Fire vision to show the way forward to dramatically accelerate citywide goals to transition from fossil fuels to efficiency and renewables.\textsuperscript{36}

In \textbf{Marin County}, a field test in 2009 of a smart grid demonstration project involving five buildings at the Marin County Civic Center successfully coordinated and optimized large-scale renewables on the electric grid.\textsuperscript{37}

In \textbf{Silicon Valley} Joint Venture's "Smart Energy Enterprise Development Zone" (SEEDZ) initiative aims to build the smart energy network of the future by uniting local energy customers, solution providers, municipalities, institutions and utility interests. The initiative aspires to high power reliability, quality, affordability and sustainability. The SEEDZ zone spans north Sunnyvale, north Mountain View, and Moffett Field. Between now and 2020, SEEDZ collaborators envision building out the country’s highest-performance two-way power network, supporting and rewarding active energy management and clean distributed generation on a sustainable economic scale.\textsuperscript{38}

B. \textit{Pursue smart grid modernization}

Microgrids are modern, small-scale versions of the centralized electricity system, typically utilizing cleaner, decentralized generation. They achieve specific local goals, such as reliability, carbon emission reduction, diversification of energy sources, and cost reduction, established by the community being served. Like the bulk power grid, smart microgrids generate, distribute, and regulate the flow of electricity to consumers, but do so locally. Microgrids, adopted early by critical needs operations such as hospitals and military operations, bring resilience and security to load serving energy systems.\textsuperscript{39} Sonoma County should pursue smart grid modernization with an initial focus on critical needs facilities.

In \textbf{Marin County} in 2009, distributed intelligent agent software provider Infotility, Inc. kicked off the field test phase of a Smart Grid demonstration project to optimize large-scale renewable energy in a community setting. The project involved five municipal buildings on the Marin County Civic Center Campus. The project was jointly funded by DOE’s Office of Electricity Delivery and Energy Reliability’s (EDER) Smart Grid Research and Development Program, Pacific Northwest National Laboratory (PPNL) and the Marin County Office of Sustainability. It was a demonstration of Infotility's Renewables Integration software, Smart Community Energy Manager software and Smart Facility Energy Manager software. During the field test, the software applications coordinated and optimized large-scale renewables such as wind and solar on the electric grid. The goal was to enable utilities and communities to manage their distributed renewable energy supplies such as wind and solar as conventional assets for the electric grid, and to ensure that those resources are a foundation and reliable element of their energy portfolios. Marin County's Marin Energy Authority (MEA) submitted a $30 million ARRA funding request to DOE to support a larger regional demonstration incorporating Infotility's software in 1,000 commercial buildings and 5,000 homes in three Marin communities. Infotility's industry partners and the community were expected to contribute an additional $60 million in matching funds. Infotility's GridAgents software has specific applications for Smart Grid-based energy networks used for integration of renewables and distributed energy resources, microgrid management, intelligent load control, and smart charging applications coordination.\textsuperscript{40}

\begin{thebibliography}{999}
\bibitem{36} Ibid
\bibitem{38} http://www.jointventure.org/index.php?option=com_content&view=article&id=809&Itemid=622
\bibitem{39} http://galvinpower.org/microgrids
\end{thebibliography}

Proven and Promising Climate Measures
From U.S. Communities for Possible Application in Sonoma County
A U.S. Army base in **Fort Bragg**, North Carolina elected to build one of the world’s largest microgrids in order to enhance power reliability while reducing costs. With guidance from Honeywell, Fort Bragg integrated a variety of distributed generation technologies that work in conjunction with the military base’s utility infrastructure. Covering more than 100 square miles, Fort Bragg owns its own electric distribution network and is able to monitor various generations from a central energy management center. The various generation technologies are fully integrated with the post’s distribution network, information technology and communications infrastructure.41

In **Chicago**, Perfect Power at Illinois Institute of Technology (IIT) partnered with the Galvin Electricity Initiative and the United States Department of Energy (DOE) to develop a Perfect Power System — a smart microgrid for the IIT main campus. In collaboration with S&C Electric, Endurant Energy and ComEd, the university is building an electricity system of interconnected smart microgrids in a loop configuration with a redundant electricity supply. Construction on this system is under way. It is estimated that the system will pay for itself as it is built over the next five years.42

The following list is of projects across the country that are pursuing microgrid development:43

- Ansonia (Ansonia, CT)
- Borrego Springs (Borrego Springs, CA)
- Colonias (La Presa, TX)
- Drexel University (Philadelphia, PA)
- Fort Bliss (Fort Bliss, TX)
- Fort Bragg (Fort Bragg, NC)
- Howard University (Washington, D.C.)
- Los Alamos (Los Alamos County, NM)
- Marin County (San Rafael, CA)
- Naperville (Naperville, IL)
- New Mexico Green Grid Initiative (NM)
- Pecan Street Project, Inc. (Austin, TX)
- Perfect Power at the Illinois Institute of Technology (Chicago, IL)
- Perfect Power at Mesa del Sol (Albuquerque, NM)
- Sacramento Municipal Utility District (Sacramento, CA)
- Santa Rita Jail (Santa Rita, CA)
- Stamford Energy Improvement District (Stamford, CT)
- Twentynine Palms (Twentynine Palms, CA)
- University of California, San Diego (San Diego, CA)

C. **Consider a pilot program for energy storage**

Assembly Bill 2514 requires CCAs to deploy energy storage equivalent to 1 percent of their peak load by 2020. For Sonoma Clean Power that will probably translate into about 5 or 6 MW of energy storage capacity. Sonoma Clean Power could partner with a technology company and financiers to launch a pilot program to comply with this law. Energy Storage is critically important for the purpose of achieving intermittent renewable penetration into the power mix beyond 33 percent.

41 http://www.galvinpower.org/resources/microgrid-hub/smart-microgrids-faq/examples
42 http://www.galvinpower.org/resources/microgrid-hub/smart-microgrids-faq/examples
43 http://galvinpower.org/resources/microgrid-hub/microgrid-projects
In April 2013 the German government began a new program to finance the introduction of battery storage into homes and small business, which it says is absolutely essential if the “energiewende,” the German expression for its energy transition – is to successfully move to the next phase and beyond 40 percent renewable penetration. Although KfW, the government-owned development bank, is looking for investors who are willing to take a loss on their investment, the energy storage financing program has generated a higher than expected response. Already 1,900 homes and small businesses have expressed interest in loans and grants (provided by the Environment Ministry) to install new solar systems and a battery storage system in their home. Around €32 million in loans has already been allocated and €5 million in grants, about 10 percent of the sums allocated in the initial phase of the program.\(^4^4\)

D. Use geographically-based energy strategies

The local jurisdictions of Sonoma County could support neighbor organized buying groups to accelerate the adoption of solar power. The jurisdictions could develop a roadmap that neighborhood groups can use to create local renewable energy coops and neighborhood renewable energy supplies.

A Los Angeles cooperative called Open Neighborhoods recently announced a residential PV cooperative solar buy for $4.78 per Watt, almost identical to the SolarBuzz price for industrial scale (500 kW) installations.\(^4^5\)

In the City of Portland, Solarize Portland is a solar panel volume-purchasing program being led by Portland area neighborhood associations. The program helps neighbors decide who to hire, what to budget, and where to start. Interested neighbors come together to choose a contractor, purchase and install solar as a community, and save significant costs as a result of bulk purchasing of solar electric panels. By choosing only one or two contractors, and conducting their own sales and marketing campaign, the project can hand deliver the contractors warm leads in a small geographic area in a constricted period of time. Job grouping, a constricted time period, and community led sales can contribute to a saving of an additional 15-20 percent. This, coupled with Oregon’s already attractive tax credits and cash incentives, can bring the cost of solar electricity down by 90 percent.\(^4^6\)

In the Washington D.C. area, Mt. Pleasant Solar Coop is a member of DC Solar United Neighborhoods (DC SUN), a coalition of neighborhood solar coops working to make solar accessible and affordable for everyone in DC. They are also a member of the Community Power Network (CPN), a network of grassroots, local, state-wide and national organizations working to build, and promote locally based renewable energy projects & policies.\(^4^7\) The coop successfully negotiated prices on 50 to 100 residential solar PV installations down to $5.50 per Watt (or lower).\(^4^8\)

The Capitol Hill Energy Coop in Washington D.C. followed the Mt. Pleasant model and completed more than 40 installations in 2010. Now, more than 10 other coops have sprouted up in all wards within DC. DC SUN brings these cooperatives together under one umbrella to advocate for better solar incentives and improved customer service from Pepco, to create jobs in DC, and to spread the word about the benefits of going solar.\(^4^9\)

The City of Vancouver’s Neighborhood Energy Strategy was adopted by Council in October 2012. It provides the road map for neighborhood energy development in the city, including key guidelines for the development of neighborhood energy supplies. Neighborhood energy systems use low-carbon sources of energy, such as waste heat from the sewers, to heat and power homes while creating only a fraction of the carbon pollution produced by natural gas systems. The City is currently working to identify utility partners for the development of two new neighborhood

\(^{44}\) http://www.cleantechfinance.net/2013/germany-finances-major-push-home-battery-storage-solar/
\(^{45}\) http://www.ilsr.org/distributed-small-scale-solar-competes-large-scale-pv/
\(^{46}\) http://www.portlandoregon.gov/bps/article/405686
\(^{47}\) http://www.mtpleasantsolarcoop.org/
\(^{48}\) http://www.ilsr.org/distributed-small-scale-solar-competes-large-scale-pv/
\(^{49}\) https://sites.google.com/site/dcsolarunitedneighborhoods/
energy systems—one for the downtown core and one along the Cambie corridor. The development of neighborhood energy systems in Vancouver is projected to reduce 120,000 tons carbon dioxide equivalent by 2020.30

E. Explore waste to energy opportunities

Crop manure, crop residues, and the 120,000 tons per year organic fraction of municipal solid waste that is landfilled in Sonoma County can be harnessed to produce power. The County should encourage biomass energy conversion from dairy farms, and should also consider biogas production from municipal solid waste using anaerobic digestion.

More detail on the operation of an anaerobic digester:

Republic Services could operate a Materials Recovery Facility at the Sonoma County Landfill that separates the organic materials out of the MSW stream. Republic would also work with the County haulers to operate a food waste collection program that is included with the organics. This organic waste could be used to feed an anaerobic digester built by Sonoma Clean Power in partnership with (Clean Energy Renewable Fuels) at the landfill site. The digester would produce biogas, which would be refined into pipeline quality biomethane. The clean, carbon neutral biomethane would then be shipped via natural gas pipeline to Sonoma Clean Power combined heat and power generation systems built and operated in partnership with (local CHP developer). These systems, built onsite, would provide 100 percent carbon-free heat and power to Memorial Hospital, the Santa Rosa Mall and several other large commercial customers. The heat and power produced by these systems would also be used by thousands of residential customers in the adjacent areas. The landfill gas generation system currently in operation at the landfill would continue to be operated, but would provide heat for the digester to increase its efficiency, as well as to provide power for the MRF and digester. This system would reduce GHG emissions by a) diverting organics from the landfill and preventing release of the methane that would otherwise be produced with nearly 100 percent efficiency (vs landfill capture systems that are usually only 75 percent efficient); b) creating 100 percent carbon free electricity that can serve both commercial and residential customers (displacing dirtier grid electricity); c) displacing natural gas used for heating, both hot water, and building heat.51

The **City of San José** has recently started processing all of the City's commercial organic waste using the first commercial scale dry fermentation anaerobic digestion and in-vessel composting facility in the U.S.52

In **Junction City** outside of Portland, a $4 million Green Lane Energy biogas facility will be built in Junction City by the end of October 2013. The plant will compost organic waste such as food scraps, straw, manure and other materials to generate methane gas that will be collected and burned to power a turbine and produce electricity. The system will anaerobically ferment organic material to create methane-rich biogas, and this biogas is the energy that will be recovered to turn a turbine. Waste will be trucked to a receiving building, where it will be separated, ground down and processed into a mixture for fermenting. The processing machine removes packaging such as milk or yogurt cartons that might be contaminating the waste. The waste will go into a homogenization tank, where it will sit for several days to ferment. It then is channeled into a large 1.2 million gallon digester that is constantly stirred, after which the material goes into a domelike structure where the methane is extracted. That gas is transferred into a biogas scrubber to remove impurities such as hydrogen sulfide and moisture. Once the gas is scrubbed, it is burned in a 16-cylinder, 2,000-horsepower engine. Much of the technology that’s being used in the process is imported from

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51 Email from Dave Erickson, California Public Utility Commission, August 28, 2013

Proven and Promising Climate Measures
From U.S. Communities for Possible Application in Sonoma County
companies in Sweden, Switzerland and Germany, including the digestion tank agitator, the waste intake sorter and engine, respectively. Some of the equipment, including the intake sorter, never has before been used in the United States.\textsuperscript{53}

In \textit{Weld County}, Colorado a project located near LaSalle will use a complete mix anaerobic digester system to produce up to 4,700 MMBtu of biogas daily making it one of the largest anaerobic digester facilities in the United States. The anaerobic digestion system converts organic feedstock and dairy cow manure into raw biogas. The raw biogas is then processed into pipeline quality RNG. After being conditioned to pipeline grade, the RNG will be supplied to Sacramento Municipal Utility District (SMUD) through a 20-year Gas Purchase Agreement (GPA).\textsuperscript{54}

\textbf{Recommendation 1.4 Continue to support current successful programs}

\textit{Background}

Sonoma County is already a leader in pursuing programs that can finance renewable energy projects. Sonoma County must stay the course with these programs and look for ways to expand them.

\begin{itemize}
\item \textbf{A. Continue to support Property Assessed Clean Energy}
\item \textbf{B. Continue to pursue Pay As You Save®}
\end{itemize}

\begin{itemize}
\item \textbf{A. Continue to support Property Assessed Clean Energy}

Sonoma County’s Property Assessed Clean Energy (PACE) Program is widely regarded as the most successful in the nation, particularly in the residential sector. To date, it has funded nearly $65M in energy efficiency and renewable energy projects.\textsuperscript{55} Sonoma Clean Power can work synergistically with the Sonoma County PACE program to help customers finance projects. Ygrene, a company that offers unlimited private financing for its energy districts, allowing property owners to finance projects without finding their own loans in a difficult market, is using Sonoma County’s PACE program as a model for their own financing projects in Sacramento and Miami.

\item \textbf{C. Continue to pursue Pay As You Save®}

Windsor Efficiency PAYS® provides water and energy saving upgrades for Windsor residential properties that provide immediate utility bill savings, new water/energy saving appliances, and drought-resistant landscaping — with no upfront cost or debt.\textsuperscript{56} The program could be expanded to include renewable energy technologies such as solar hot water heaters. Other jurisdictions in Sonoma County should also consider offering Pay As You Save® programs to their residents.

\textsuperscript{54} http://www.heraldonline.com/2013/09/05/5179891/edf-renewable-energy-acquires.html
\textsuperscript{55} http://residential.sonomacountyenergy.org/lower.php?url=pace-financing-1614
\textsuperscript{56} http://www.townofwindsor.com/index.aspx?nid=819
Appendix B: Energy Efficiency

Introduction

Over 30 percent of Sonoma County GHG emissions are associated with energy use in buildings. Consequently, Sonoma County must include measures to increase building energy efficiency as part of its climate protection efforts. According to the U.S. Environmental Protection Agency, “Energy efficiency should be a cornerstone of energy and/or climate policies at all levels of government, based on its proven status as a cost-effective option for reducing carbon dioxide emissions and reducing the cost of climate policies.”

Key Recommendations:

<table>
<thead>
<tr>
<th>Recommendation</th>
<th>Communities Employing Recommendation</th>
<th>Sonoma County Status and Applicability</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.1 Identify and implement best practices for aggressively increasing the energy efficiency of buildings</td>
<td>Claremont, Portland, San Rafael, Seattle</td>
<td>Sonoma County is already implementing Property Assessed Clean Energy and Pay-As-You-Save financing programs that are not yet yielding the needed tranformational change.</td>
</tr>
<tr>
<td>2.2 Expand and steepen energy use disclosure requirements</td>
<td>Austin, Berkeley, Boston, San Francisco</td>
<td>California has new energy use disclosure laws that Sonoma County can build upon.</td>
</tr>
<tr>
<td>2.3 Develop a commercial commissioning / retro-commissioning program</td>
<td>Los Angeles, New York, Seattle</td>
<td>Sonoma County currently has no commissioning or retro-commissioning program.</td>
</tr>
<tr>
<td>2.4 Use public-private partnerships such as performance contracts</td>
<td>Connecticut, Houston, Massachusetts, New York City</td>
<td>Some of the jurisdictions of Sonoma County are engaged in partnerships with private entities already, but more opportunities exist.</td>
</tr>
</tbody>
</table>

The 2008 Sonoma County Community Climate Action Plan identified broad steps that are still relevant for reducing emissions through energy efficiency:

1. Retrofit existing buildings
2. Maximize water efficiency in our homes and businesses
3. Mandate green building standards
4. Improve efficiency of pumping operations for water and wastewater

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Many U.S. cities are successfully implementing such strategies.

A new report by the American Council for an Energy-Efficient Economy (ACEEE) ranks America’s 34 largest cities on energy and cost savings in five key areas. The graphic below shows the top five cities that, according to ACEEE, are doing the most. These are Boston, Portland, New York, San Francisco, Seattle, and Austin.

These cities recognize the benefits of energy efficiency, which include improving community self-reliance and resilience, saving money for households, businesses, anchor institutions, and local governments, creating local jobs, extending the life and reducing the costs and risks of investments in critical infrastructure, catalyzing local economic reinvestment, improving the livability and the local asset value of the built environment, and protecting human health and the natural environment through reducing emissions of criteria pollutants and greenhouse gases.

Sonoma County faces several challenges in retrofitting its housing stock. The county has 180,000 housing units (houses, apartments and condominiums) and four in ten housing units are occupied by renters, according to the U.S. Census Bureau.

The 2008 Community Climate Action Plan contains the goal of retrofitting 80 percent of housing units (totaling 205,000 housing units as of the last census) and 80 percent of the commercial building stock (totaling 177,000 commercial properties, according to Jeremy Scannell of SCEIP) in Sonoma County. This is a very steep goal (about 5,470 housing units per year for 30 years), but in line with what is needed to meet the GHG reduction targets that

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4 [http://www.pressdemocrat.com/article/20131030/business/131039948#.UnHg01uWf5k.email](http://www.pressdemocrat.com/article/20131030/business/131039948#.UnHg01uWf5k.email)
5 [http://quickfacts.census.gov/qfd/states/06/06097.html](http://quickfacts.census.gov/qfd/states/06/06097.html)
would satisfy the Intergovernmental Panel on Climate Change’s scientific mandate for GHG reductions. In order to meet this goal in a 30-year time frame, Sonoma County would have to retrofit 4,800 homes per year, or 400 homes per month. Moreover, the community would have to retrofit 4,720 commercial properties every year for 30 years.

The primary barrier to achieving this goal are insufficient incentives for energy efficiency, both for homeowners and business owners to make improvements for their own buildings, and for residential and commercial landlords to make improvements for their tenants.

The Institute for Local Governments in California recommends the following for energy efficiency improvements that involve collaboration with both businesses and residents:

Working with local businesses to:

- Encourage community businesses to conduct energy audits and implement energy efficiency retrofits through activities such as energy efficiency workshops, energy fairs, agency websites and social media.
- Encourage businesses to install energy efficient exterior lighting that is appropriate for the location and use, considering security and decorative lighting issues.
- Collaborate with local retail businesses to encourage businesses to purchase energy efficient products.
- Promote and reward energy efficiency efforts of local retail businesses.
- Adopt an energy financing program, such as through a PACE (Property Assessed Clean Energy) financing district, to help businesses install energy efficiency retrofits in existing residential and commercial buildings.
- Require energy audits and/or retrofits for commercial properties at time of sale.
- Require new commercial buildings to exceed Title 24, California’s energy efficiency standard, to the extent permitted by law.
- Require new commercial construction to be net zero energy.

They also suggest working with homeowners and apartment owners to:

- Provide information about Energy Upgrade California™ to help homeowners increase energy efficiency.
- Provide rebates or other financial incentives to help residents pay for whole house retrofits.
- Sponsor a home energy makeover contest that includes energy efficient audit and improvements as prizes.
- Adopt an energy financing program, such as through a PACE (Property Assessed Clean Energy) financing district, to help homeowners install energy efficiency retrofits in existing residential buildings.
- Require energy audits and/or retrofits at time of sale for residential properties.
- Require energy audits and/or retrofits at time of residential remodeling or renovation projects.
- Require new residential buildings to exceed Title 24, California’s energy efficiency standard, to the extent permitted by law.
- Require new residential construction to be net zero energy.

Communities across the country are implementing some of these recommendations. However, in many cases these recommendations either do not offer enough financial incentive to be adopted widely or the mandates have received too much political backlash to be passed in any local ordinance. Also, some measures are not large enough in scale to make any real difference in emissions. While local mandates clearly have the most teeth, it is difficult to get political support for them. Below is a tour of some of the most promising strategies for reducing emissions from buildings and suggestions for how to navigate this challenging financial and political terrain.

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2.1 Identify and implement best practices for aggressively increasing the energy efficiency of buildings

Background

Even the most highly regarded energy efficiency programs are not producing results to the degree needed. Therefore, further research of energy efficiency best practices is recommended. Research is a relatively low-cost upstream investment compared with the investment ultimately made on energy efficiency programs. Given that substantial energy efficiency funding is expected to come through Sonoma Clean Power, comprehensive and pro-active research can provide data-backed confidence that funds will be well spent.

Strategies to Consider:

A. Investigate greener building codes
B. Examine successful whole house retrofit programs

A. Investigate greener building codes

Sonoma County should investigate the leaders in green building codes and glean wisdom from the experts in green building – namely the U.S. Green Building Council and Build It Green. The jurisdictions of the county should consider using Build it Green’s Green Point rating system for residential units and the Leadership in Energy & Environmental Design (LEED) rating system for non-residential buildings. Because the majority of the housing stock is existing buildings, Sonoma County should consider deep green energy efficiency requirements for major remodels and subsidizing audits and guaranteeing quick turnaround times for permits for projects that achieve LEED Gold or another comparable benchmark.

The City of San Rafael’s Green Building Ordinance requires the use of the Build it Green and Green Point rating system for residential units and the LEED rating system for non-residential buildings. For single family and duplex units, new construction must be verified by a GreenPoint rater and certified by Build it Green. Multi-family units must be verified by a LEED accredited professional plus certified by either a GreenPoint or a BPI rater. All new non-residential buildings or those with additions must be LEED certified, with the point requirements increasing with the project size. Projects over 50,000 square feet must be LEED Gold certified.

For already existing residential single family or duplex units, all remodeling projects must include insulation of hot water pipes and installation of radiant barriers when reroofing and sheathing is removed. For projects over $50,000, owners must submit a completed GreenPoint Rated Existing Home checklist, but no minimum points are required. For projects over $100,000, point requirements begin and increase with the project size. Owners must also submit evidence that a HERSII or BPI home performance audit has been completed within the past year. Projects over $300,000 must submit verification of improvement in home performance audit results of 20% or more or a

7 This recommendation is directed toward learning from others’ research of energy efficiency best practices and not toward original research.
minimum HERSII score of 100, plus provide evidence of verification by a GreenPoint Rater. Enforcement is handled through city inspectors.

To incentivize higher achievements, the City of San Rafael assists projects achieving 100+ GreenPoints or LEED Gold by paying for a GreenPoint rater, guaranteeing a 2-week turnaround for plan checks and providing a bronze wall plaque. All new construction must pre-wire and plumb for PV and solar hot water. The ordinance also sets requirements to divert material waste from the landfill. 8

B. Examine successful whole house retrofit programs

The County of Sonoma has been involved in energy efficiency programs for several years, but so far none have yielded the level of adoption needed to meet Sonoma County’s goals. Several whole house retrofit programs around the country have enjoyed successes that hold lessons for Sonoma County.

In the City of Claremont, the Community Home Energy Retrofit Project (CHERP®) is a volunteer, non-profit organization engaged in a community-wide program to help achieve aggressive goals for improved energy efficiency in buildings through education about the impact of buildings on greenhouse gas emissions and the many benefits that accrue to building owners and the city from retrofiting buildings. The program started as the Claremont Home Energy Retrofit Program in the City of Claremont. When it was acknowledged for being the first city in the State of California to retrofit one percent of its homes with the Energy Upgrade California program, the program’s founder recognized the potential to expand to other cities and changed the program’s name to Community Home Energy Retrofit Program. 9 CHERP’s focus is grassroots, city and community engagement programs. 10

The results so far: 11

- Homes retrofitted: 232
- Rebates received by homeowners: $826,000+
- Dollars invested in local real estate: $3,000,000+
- Carbon mitigated (metric tons): 400+
- Homes green labeled: 162
- Percent energy saved per home on average: 30%
- Local residents educated: 2,500+

In the City of Portland, Clean Energy Works Oregon (CEWO) is a non-profit program for residential energy efficiency. CEWO is funded through a grant to the City of Portland through EERE’s Better Buildings Neighborhood Program, as part of the American Recovery and Reinvestment Act of 2009. The program offers home energy assessments (valued at $500) and advice from independent energy advisors at no cost to customers. CEWO is Oregon’s one-stop shop for home energy upgrades and services. It connects residents with ENERGY STAR® qualified contractors certified through the Building Performance Institute to perform home energy assessments and the follow-up upgrade work. Homes that can achieve energy savings of 15 percent or more are eligible for low-cost, long-term financing to cover the cost of home upgrades. Loan obligations can be repaid directly or through homeowners’ monthly utility bills. Since September 2010, CEWO has completed more than 6,000 residential energy assessments and 2,700 residential energy upgrades, and provided more than 2,400 residential loans—totaling $30

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8 http://www.cityofsanrafael.org/commdev-building-green/
9 http://www.cherp.net/about-us
10 http://www.cherp.net/how-it-works
11 http://www.cherp.net/about-us

5 Proven and Promising Climate Measures
From U.S. Communities for Possible Application in Sonoma County
57
Proven and Promising Climate Measures
From U.S. Communities for Possible Application in Sonoma County

million. CEWO estimates that for every 100 projects completed, 10 construction jobs are created, $1.4 million in economic activity is generated, and homeowners collectively save $28,000 in annual energy costs.\textsuperscript{12}

The City of Seattle designed and implemented the Community Power Works (CPW) program after receiving a Better Buildings Neighborhood Program grant from the U.S. Department of Energy. During its pilot phase, Community Power Works operated in the residential, commercial and institutional sectors. Since 2010, the program has upgraded more than 3,000 homes, 1.5 million square feet of commercial space, four projects in three major hospitals, and 17 municipal buildings. Community Power Works projects will avoid 332,777 metric tons of carbon over the lifetime of efficiency measures, and the program has created more than 250,000 hours of work for 1,250 people.\textsuperscript{13}

CPW has implemented energy efficiency programs in the residential, commercial, and institutional sectors. For residential customers, they provide a “one-stop shop” for energy upgrades in single-family homes by offering low-cost energy assessments, rebates, financing, and pre-approved contractors. They also partner with HomeWise, the City of Seattle’s low-income weatherization program, funds energy efficiency improvements in multifamily buildings. For the commercial sector, CPW offers free energy assessments, financing, and rebates for restaurants, corner stores, and small to medium grocers. Individuals and organizations from the environmental, labor, business and energy sectors advise and support CPW and its participants. CPW was funded through a Federal grant through September 2013 with 92% of the funding now spent. CPW offers rebates and customer service that complement programs offered by Seattle City Light and Puget Sound Energy. Single-family homes that are not served by utilities for heating fuel are also eligible for energy upgrade rebates through CPW.\textsuperscript{14}

2.2 Expand and steepen energy use disclosure requirements

\textit{Background}

California law now requires energy use disclosure prior to sale, lease, or financing of a nonresidential building.\textsuperscript{15} This requirement can be expanded to the residential sector. Water use disclosure should be included in any energy use disclosure requirement, given the embodied energy in water use. With knowledge about the energy performance of a building, buyers will know the operating costs of any buildings they are considering for purchase. Such information should make energy efficient buildings more valuable thereby creating more demand for such buildings and making owners more likely to make energy efficiency upgrades to their buildings.\textsuperscript{16} Disclosure requires assessment of building performance, and according to a recent finding by the U.S. Environmental Protection Agency, assessment of buildings leads to energy efficiency improvements.\textsuperscript{17}

The most important aspects of energy use disclosure laws include:

1. Enforcement approach
2. Definition of the amount of square footage of buildings affected (for example, >50k sq ft)

\textsuperscript{13} http://www.communitypowerworks.org/about-community-power-works/history/
\textsuperscript{14} http://www.communitypowerworks.org/wp-content/uploads/2012/06/CPW-Infographic_September.pdf
\textsuperscript{15} http://www.energy.ca.gov/ab1103/rulemaking/documents/2013-06-13_AB_1103_FAQ.pdf
\textsuperscript{17} EPA Analysis Shows Big Benchmarking Savings, Oct 11, 2012: http://www.imt.org/news/the-current/epa-analysis-shows-big-benchmarking-savings
3. Frequency of disclosure (annually/every 5 years/only at time of sale?) and the level of disclosure (just a benchmark or a full audit?)
4. Deadlines for the various requirements; if they are too distant they are meaningless.
5. Whether or not to include water usage
6. Whether or not to require mandatory rating

Sonoma County can analyze various ordinances using a new online tool that enables comparison of policies across cities and states: http://buildingrating.org/policy-comparison-tool

Strategies to Consider:

A. Institute an energy use disclosure ordinance that includes single-family and multi-family properties
B. Require regular and frequent disclosure and an energy assessment (full audit) and ratings

A. Institute an energy use disclosure ordinance that includes single-family and multi-family properties

Sonoma County has a large single-family and multi-family housing stock and will benefit from including them in any energy use disclosure requirements not covered by the state law.

In the City of Austin, an Energy Conservation Audit & Disclosure Ordinance provides efficiency information to homebuyers, apartment renters, and building owners to reinforce the value of energy efficiency. The ordinance was developed in cooperative effort between City staff, the real estate industry, commercial property managers and the Austin apartment community. For single-family residential properties an energy audit must be performed before being sold and disclosed to potential buyers. Audits must be performed by auditors certified by Residential Energy Service Network (RESNET) as a Home Energy Rater or by Building Performance Institute (BPI) as a Building Analyst. According to ACEEE’s 2013 City Energy Efficiency Scorecard, Austin has seen improved compliance with residential energy codes upon its adoption and implementation of third-party testing requirements to verify compliance. The city leveraged the technical expertise in the private sector to design a third-party testing requirement. Austin Energy sponsors free classes at Austin Community College that teach commercial customers how to use the free online rating tools. The utility also sends college-trained interns to small businesses without charge to assist owners in developing their energy ratings.

The City of Berkeley, which has had a Residential and Commercial Energy Conservation Ordinance (RECO/CECO) for years, is now opting to switch to using an energy use disclosure ordinance for single-family, multi-family, and commercial properties. The ordinance will be modeled after pieces of ordinances from Boston, New York City, Chicago, and Seattle and is expected to yield greater energy savings. Berkeley opted for this change because the required measures under their RECO/CECO are out of date and the energy code requirements exceed those measures. In addition, the City won't have to update the ordinance continually to keep up with technology and state policy changes. The new ordinance aims to be more nuanced than the RECO/CECO was, and it will not trigger

18 http://www.aceee.org/sector/local-policy/case-studies/austin-energy-con
19 Ibid
20 http://www.aceee.org/sites/default/files/publications/researchreports/e13g.pdf
permit requirements, which vexed building owners and realtors.21

B. Require regular and frequent disclosure and an energy assessment (full audit) and ratings

If the building stock in Sonoma County is to be rapidly transformed at the speed and scale required to meet Sonoma County’s goals, energy use disclosure must happen more frequently than just at the time of sale of a building. In addition, the energy use disclosure must go beyond a basic benchmark to catalyze energy efficiency upgrades with an actionable audit that suggests upgrades – and not just a benchmark that compares the building against other similar buildings. The more involved audit could be required every five years, with the basic benchmarking happening annually.

The City of Boston’s Building Energy Reporting and Disclosure Ordinance (BERDO) requires Boston's large- and medium-sized buildings to report their annual energy and water use to the City of Boston after which the City makes the information publicly available. In addition, every five years buildings need to complete an energy assessment or energy action. Exemptions are provided for buildings that are already efficient or are making significant progress on energy efficiency.22

The City of San Francisco has a Benchmark and Audit Ordinance whereby non-residential buildings must benchmark energy use every year, and get an energy audit every five years. This allows decision-makers to compare performance to other buildings.23

In January of 2010 the City of Seattle passed the Energy Disclosure Ordinance, which requires large commercial and multi-family property owners in Seattle to annually benchmark energy use and provide the City with ratings to allow comparison across different buildings. Building owners will also be required to share energy usage and ratings with prospective buyers, tenants and lenders during the sale, lease or financing of properties.24

2.3 Develop a commercial commissioning / retro-commissioning program

Background

Commissioning is a process that ensures that a new building operates as efficiently as the designer intended and that building staff operate its systems and equipment properly. It is an intensive quality assurance process for buildings that begins during design and continues through construction, occupancy, and operations. Retro-commissioning mirrors a similar process for existing buildings. Retro-commissioning can resolve problems that occurred during design or construction, or address problems that have developed throughout the building's life.25

According to a report by Lawrence Berkeley Lab, commissioning and retro-commissioning of commercial buildings are potentially the most cost-effective strategies for reducing energy, costs, and GHG emissions in buildings today.26

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21 Phone call with Timothy Burroughs at the City of Berkeley on May 20, 2014.  
22 http://www.cityofboston.gov/eeos/reporting/  
24 http://wwwICLEUSA.org/news/seattle-approves-energy-disclosure-ordinance  
25 http://cx.lbl.gov/definition.html  
Retro-commissioning a few large buildings (more likely commercial) is more cost effective than retro-commissioning many small ones (more likely homes). Furthermore, commercial building owners are more apt than home owners to view energy efficiency retrofits as a business decision and thus implement cost-saving measures.

Some places are better suited for mandatory commercial energy efficiency ordinances, for example, Manhattan where the location is so desirable that businesses are highly motivated to stay despite extra energy efficiency requirements. In contrast, if Sonoma County adopted tough energy efficiency mandates it might drive businesses away, thus causing “leakage” of emissions to other communities. Such leakage merely moves emissions elsewhere rather than reducing them. The key may be to create commercial hubs that are so unique and attractive to businesses that mandated upgrades become an accepted up-front cost for businesses and a welcome long-term savings. Voluntary financing programs that feature no up-front cost for energy upgrades and guarantees for savings may succeed where mandatory programs would not.

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**Strategies to Consider:**

A. Create a voluntary program through Sonoma Clean power

B. Mandate retro-commissioning for huge energy wasters in large commercial hubs

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**A. Create a voluntary program through Sonoma Clean power**

Sonoma Clean Power’s plan already includes energy efficiency programs. A commercial retro-commissioning program would be especially useful in tackling some of the largest energy wasters with deep energy efficiency retrofits.

In the greater Los Angeles area, Southern California Edison’s commercial retro-commissioning program called RCx offers financial incentives to SCE customers for their retro-commissioning projects. SCE asserts that RCx typically saves owners up to 15 percent of annual energy costs and has a low simple payback from energy savings, averaging two years or less.27

**B. Mandate retro-commissioning for huge energy wasters in large commercial hubs**

In conjunction with energy use disclosure requirements, Sonoma County can mandate retro-commissioning for huge energy wasters in large commercial hubs, where real estate values are high and businesses are highly motivated to stay put.

**New York City’s** Energy Audit & Retro-commissioning Ordinance mandates that buildings over 50,000 gross square feet undergo periodic energy audit and retro-commissioning measures as part of the Greener, Greater Buildings Plan.28

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2.4 Use public-private partnerships such as performance contracts

Background

Municipalities control buildings and infrastructure that consume significant amounts of energy. Municipalities often lack the upfront capital to conduct energy audits and invest in needed energy efficiency upgrades. By utilizing public-private partnerships such as performance contracts, the municipality can make upgrades, save money, avoid upfront costs, and lead by example.20

Strategies to Consider:

A. Pursue energy performance contracts to make energy efficiency upgrades to public facilities
B. Support private sector financial institutions to catalyze an energy efficiency retrofit industry

A. Pursue energy performance contracts to make energy efficiency upgrades to public facilities

Some of the jurisdictions in Sonoma County have already pursued energy performance contracts to help finance energy efficiency upgrades with no up-front cost to tax payers and substantial energy savings. Many more projects are possible both at the city and county level.

Massachusetts, Connecticut, and New York City implemented Open Market ESCO, a $9 million pilot program that will finance energy-efficient retrofits for an estimated 1,200 units of low-income housing and allow property owners to pay for the upgrades through reduced energy costs. The Open Market ESCO program is establishing a network of qualified subcontractors and professionals to conduct all work.30

The City of Houston awarded Siemens Industry, Inc., a multi-phase performance contract for 5.5 million sq. ft. of buildings. Upgrades included a solar thermal collector system, lighting upgrades, ballpark and outdoor field lighting, and HVAC efficiency improvements. Anticipated annual savings include more than 8,800,000 kWh of electricity, 960 MMBtu of natural gas, 57,440 kgal of water, 9,267,208 pounds GHG, operational savings of $907,665, and an excess of $30 million over the 13-year contract.31

B. Support private sector financial institutions to catalyze an energy efficiency retrofit industry

29 Government Code 4217 allows a public entity to enter into and deliver a public energy efficiency project by permitting the award of public contracts going through formal public bidding, thus saving the costs of that process which often exceed $100,000. https://www.acia.com/ACIA-News/Inspector-Magazine/Energy-Drives-our-Society.html
Ygrene in Sonoma County offers unlimited private financing for its energy districts, allowing property owners to finance projects without finding their own loans in a difficult market. The County of Sonoma should find ways to support Ygrene and encourage similar endeavors that can jump-start the local energy efficiency retrofit industry.

**New York City** used $37 million of its ARRA funding to establish a new financing agency called the NYC Energy Efficiency Corporation (NYCEEC), an independent, non-profit financial corporation whose goal is catalyzing the development of a market-driven energy efficiency retrofit industry.

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32 https://ygrene.us/model.html
33 www.nyceec.com
Appendix C: Transportation and Land Use

Introduction

Transportation produces more than half of Sonoma County’s GHG emissions. Strategies that reduce emissions in this sector are crucial for reaching Sonoma County’s climate protection goals. Reducing emissions from transportation would not only improve local air quality, but also stop millions of dollars from bleeding out of the local economy through Sonoma County’s tailpipes. Ending Sonoma County’s reliance on fossil fuels in the transportation sector and replacing it with a reliance on locally produced clean energy is a bold vision and a difficult path. However, the Community Climate Action Plan issued in 2008 offered many ideas for forging ahead on this path, including:

1. Build the SMART Train
2. Implement the Comprehensive Transportation Plan (CTP)
3. Strengthen transit-oriented, mixed-use development and use urban growth limits to control sprawl
4. Strengthen zoning laws to protect lands that sequester carbon
5. Institute demand pricing policies (congestion and parking fees)
6. Create an electric car share fleet
7. Encourage business leadership
8. Reduce regulatory barriers (fast track permitting for "green" projects and modify permitting procedures to accommodate siting of renewable energy projects such as solar, wind and geothermal).

Today, the SMART Train is under construction and the rest of the above measures are also in various stages of implementation. These measures were informed by transportation and land use professionals in Sonoma County, and they are supported by research from many respected institutions, including the California Air Pollution Control Officers Association (CAPCOA), the American Council for an Energy-Efficient Economy (ACEEE), and the Urban Land Institute. These institutions have identified key opportunities and strategies for greenhouse gas reductions from transportation and land use, as well as ways to categorize them.

The California Air Pollution Control Officers Association (CAPCOA) sites a list of key opportunities in the circulation element related to GHG reductions. The most relevant of these for Sonoma County are:

1. Identify and prioritize infrastructure improvements needed to support increased use of alternatives to private vehicle travel, including transit, bicycle, and pedestrian modes;
2. Coordinate with adjacent municipalities, transit providers, and regional transportation planning agencies to develop mutual policies and funding mechanisms to increase the use of alternative transportation;
3. Establish higher priorities for transit funding relative to street and road construction and maintenance;
4. Incorporate “Complete Streets” policies that foster equal access by all users, including pedestrians and bicyclists;
5. Promote linkages between development locations and transportation facilities;
6. Identify appropriate locations for intermodal transportation stations; and
7. Identify opportunities, in cooperation with transit providers, to provide financing for transit operations and maintenance.

Furthermore, in a recent report, the American Council for an Energy-Efficient Economy (ACEEE) scored cities based on a number of transportation metrics. The categories for scoring include:

1. Location efficiency policies (promoting transit-oriented compact development)
2. Mode shift strategies (discouraging single occupancy vehicle travel in favor of other modes)
3. Public transit policies
4. Efficient vehicle policies (supporting electric vehicles and efficient driving)
5. Freight transportation policies

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With the exception of freight transportation policies, the above categories are all covered within the recommendations put forth in this paper. (Freight was never mentioned by any of the surveyed cities as an important part of their GHG reduction strategies). Portland, Boston, Atlanta, San Francisco, and Philadelphia were ranked by ACEEE as having top transportation policies, and measures from each of these cities are discussed in this section.4

Another recent study – by the Urban Land Institute – titled, “Moving Cooler,” estimates the potential effectiveness of strategies to reduce GHG emissions. The study also groups these strategies into the following categories:

1. Pricing and taxes. Strategies raise the costs associated with the use of the transportation system, including the cost of vehicle miles of travel and fuel consumption. Both local and regional facility-level pricing strategies (e.g., congestion pricing) and economy-wide pricing strategies (e.g., carbon pricing) are considered.
2. Land use and smart growth. Strategies focus on creating more transportation-efficient land use patterns, and by doing so reduce the need to make motor vehicle trips and reduce the length of the motor vehicle trips that are made.
3. Non-motorized transport. Strategies encourage greater levels of walking and bicycling as alternatives to driving.
4. Public transportation improvements. Strategies expand public transportation by subsidizing fares, increasing service on existing routes, or building new infrastructure.
5. Ride-sharing, car-sharing, and other commuting strategies. Strategies expand services and provide incentives to travelers to choose transportation options other than driving alone.
6. Regulatory strategies. Strategies implement regulations that moderate vehicle travel or reduce speeds to achieve higher fuel efficiency.
7. Operational and intelligent transportation system (ITS) strategies. Strategies improve the operation of the transportation system to make better use of the existing capacity; strategies also encourage more efficient driving.
8. Capacity expansion and bottleneck relief. Strategies expand highway capacity to reduce congestion and to improve the efficiency of travel.
9. Multimodal freight sector strategies. Strategies promote more efficient freight movement within and across modes.5

Categories 1-7 are addressed by the recommendations of this paper. Category 8, capacity expansion, is being implemented by widening Highway 101, although many studies find that highway widening induces demand and therefore does not reduce congestion and does increase emissions.6

The recommendations discussed in this paper are informed by the above research and are focused on strategies that are appropriate for Sonoma County. The top priority recommendations are listed first, and the top two recommendations are likely to be the most expedient.

4 Page 2 of ACEEE’s 2012 City Energy Efficiency Scorecard Summary: http://www.aceee.org/sites/default/files/publications/researchreports/e13g.pdf
6 http://www.vtpi.org/gentraf.pdf
### Key Recommendations:

<table>
<thead>
<tr>
<th>Recommendation</th>
<th>Communities Employing Recommendation</th>
<th>Sonoma County Status and Applicability</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>3.1</strong> Accelerate the electrification of the transportation sector; encourage carbon-light fuels and vehicles</td>
<td>Austin, Boston, Chicago, Vancouver, San Francisco; Tennessee</td>
<td>Sonoma County is already relatively EV ready, poised to use Sonoma Clean Power for further EV rollout; Sonoma County could institute an anti-idling ordinance for trucks.</td>
</tr>
<tr>
<td><strong>3.2</strong> Expand transportation demand management (TDM) programs.</td>
<td>Berkeley, Boston, Boulder, King County, Montgomery County, San Francisco, Silicon Valley</td>
<td>Sonoma County TDM programs include Safe Routes to School, the Carma Ridesharing Program, and the Eco2School Program for high school students.</td>
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<td><strong>3.3</strong> Require that growth in new and existing developments be zero-carbon, i.e., energy efficient and renewable energy generating, city-centered, walkable, bikable, transit-oriented, and mixed-use.</td>
<td>Atlanta, Boston, Chicago, King County, Montgomery County, Philadelphia, Portland, Sacramento, Woodbury</td>
<td>Sonoma County has a mix of sprawl and mixed-use transit-oriented development strategies at play. Progress has been made, but there is room for improvement.</td>
</tr>
<tr>
<td><strong>3.4</strong> Prioritize funding for active (non-motorized) modes of transportation.</td>
<td>Minneapolis, Portland, San Francisco, Seattle, Washington D.C., &gt;500 cities with public bike share programs</td>
<td>Sonoma County’s Bicycle and Pedestrian Plan has many good ideas that lack funding.</td>
</tr>
<tr>
<td><strong>3.5</strong> Integrate Climate Protection into General Plans</td>
<td>Sonoma County, St. Lucie</td>
<td>Sonoma County’s Comprehensive Transportation Plan (CTP) is congruent with the strategies of communities that have seen significant progress in the transportation sector.</td>
</tr>
<tr>
<td><strong>3.6</strong> Use Pricing and Taxes</td>
<td>Montgomery County</td>
<td>Pricing and taxes have not been popular in the past in Sonoma County.</td>
</tr>
<tr>
<td><strong>3.7</strong> Improve Public Transportation</td>
<td>Alameda County, Multnomah County, Philadelphia, Portland, Seattle, Utah State University</td>
<td>Sonoma County’s bus system is mainly used by those who cannot afford cars. To reduce GHG emissions, the bus system must attract people who currently drive cars.</td>
</tr>
<tr>
<td><strong>3.8</strong> Optimize Traffic Efficiency</td>
<td>Montgomery County</td>
<td>Traffic signals are already synchronized at some major intersections, but there is probably room for improvement; the City of Cotati has outlawed roundabouts, but the County may want to look at roundabout viability in new developments throughout the County.</td>
</tr>
<tr>
<td><strong>3.9</strong> End Investment in Infrastructure that Increases Emissions from Transportation</td>
<td></td>
<td>Sonoma County is still investing significant funds in freeway widening and other projects that increase emissions.</td>
</tr>
</tbody>
</table>
3.1 Accelerate the electrification of the transportation sector; encourage carbon-light fuels and vehicles

Background

Sonoma County is already doing a lot to deploy electric vehicles. In June of 2011, The Bay Area Climate Collaborative selected Sonoma County as the “Most EV-Ready Community 2011” for its wide-ranging policies to accelerate widespread electric vehicle adoption and municipal usage of EVs. As of July 2011, the Electric Vehicle Charging Station (EVCS) Siting Plan consisted of 19 restricted-use chargers for County vehicles at various County offices, 13 public and restricted chargers in the City of Santa Rosa and nine public and restricted chargers at the Sonoma County Water Agency (SCWA) offices on Aviation Blvd. The County also had 6 more chargers ready for installation by the end of 2011, mostly reserved for fleet use. The County, the City of Santa Rosa, and the SCWA had plans to install an additional 31 chargers (mostly for fleet use), and to receive 31 plug-in electric fleet vehicles through an MTC grant by the end of 2011. A second grant from MTC was estimated to provide an additional 25 public chargers on County-owned properties in the southern part of the County by the end of 2012. In addition, it was anticipated that 12 - 20 public chargers will be installed in highway corridors on public and private properties funded by the Northern Sonoma County Air Pollution Control District, and 12 - 20 more public chargers in southern cities funded by the federal Charge Point America Program. In summary, approximately 130 chargers were estimated be in place for fleet and public use throughout the County by the end of 2012.

Strategies to Consider:

A. Use Sonoma Clean Power to Execute Electric Vehicle and Low-Carbon Vehicle Deployment
B. Offer EV Charging Station Rebates through Sonoma Clean Power
C. Consider Requiring Charging Stations with all new Development
D. Expand the Number of EV Charging Stations and Lead by Example
E. Ask Building and Property Owners to Commit to Installing EV Charging Stations
F. Create Electric Truck Purchase Vouchers
G. Employ Anti-idling Technology at Truck Stops

A. Offer EV Charging Station Rebates through Sonoma Clean Power

Sonoma Clean Power has the opportunity to play a key role in encouraging EV deployment. SCP has unique access to its customers at the time of billing and can include information about electric vehicles in the bills that go out to customers. Various EV manufacturers can share the cost of this printed collateral as part of their marketing budget.

The City of Austin’s municipal utility, Austin Energy, offers residential customers and PEV owners a rebate of 50 percent of the cost of the purchase and installation of a Level 2 Charging Station. Residents can plug the car into a regular outlet or into a Level 2 station, which provides a faster charge. The maximum rebate amount for a Level 2 (240V station) is $1,500. To qualify for the rebate, residents must be an Austin Energy customer and use an approved contractor.

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9 http://www.austinenergy.com/about%20us/Environmental%20Initiatives/Plug-In%20Partners/drivers.htm
B. Consider Requiring Charging Stations with all new Development

Sonoma County should consider requiring charging stations with all new development. Although a large portion of the early adopters of EV’s will be able to refuel their cars using a home base charging unit, many users will need to access EV charging stations at publicly available locations.

**The City of San Rafael** has a solar EV-ready provision requiring all new development to be wired for EVs and solar.10

**The City of Vancouver** requires all new developments to provide charging stations for electric vehicles.11 The City has installed 40 electric vehicle charging stations and is working to install 40 more at both City-owned facilities and those owned by private partners. The City has the biggest municipal fleet of electric vehicles in Canada.12

C. Expand the Number of EV Charging Stations and Lead by Example

As previously mentioned, Sonoma County has done a lot to expand the number of EV charging stations in the County. However, the number of EV drivers is climbing and the need for EV stations is growing.

**The City of San Francisco** is charged with cleaning up its fleet by replacing older vehicles with alternative fueled vehicles, but also reducing fleet size. With fewer vehicles, more trips by City employees will be taken by transit, walking or biking and when a vehicle is needed, it will be in a zero-to-low emitting vehicle. To date, the City has the cleanest transit fleet in the nation and approximately 1000 alternative fueled vehicles and 10 all electric vehicles for City employees.13

D. Ask Building and Property Owners to Commit to Installing EV Charging Stations

While Sonoma County should consider requiring charging stations with all new development, there will also be a need to address access to charging stations within existing developments.

**Boston:** In spring 2010, both the Air Pollution Control Commission (APCC), which administers Boston’s parking freezes, and the Boston Transportation Department, which develops Transportation Access Plan Agreements (TAPAs) for new projects, began asking building and property owners to make commitments to install charging stations in parking facilities. The first six months of this policy produced commitments for at least 22 charging stations to be installed at four locations by spring 2011.14

E. Create Electric Truck Purchase Vouchers:

Diesel trucks create a local air quality issue for Sonoma County, as well as contributing to greenhouse gas emissions. Exploring creative programs such as Chicago’s EV truck voucher program, described below, would help to improve local air quality and reduce emissions, and may have the added benefit of attracting green businesses to the region.

**Chicago** has started an EV truck voucher program. Smith Electric Vehicles, which has been described as one of the world’s leading manufacturers of all-electric commercial vehicles, has agreed to open a Chicago plant creating up to 200 new jobs thanks, in part, to a $15 million city incentive plan designed to boost the market for electric trucks. Smith Electric Vehicles chose Chicago as its third U.S. location after Mayor Rahm Emanuel disclosed plans to use a federal anti-pollution grant to create more customers for the batteries and electric

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10 Email from Alex Hinds, May 20, 2014
vehicles that Smith Electric plans to manufacture there. Fleets operating in all six Chicago counties — Cook, DuPage, Kane, Lake, McHenry and Will — will be eligible for vouchers that will be applied to the purchase price of a truck at the point of sale — whether at a dealership or through a manufacturer. Voucher size would be based on the size of the truck battery, with the subsidy covering roughly 60 percent of the price differential between cheaper diesel truck and a more expensive electric truck. For a $75,000 truck with an 80 kilowatt-hour battery, the city voucher would be $45,000. The Emanuel administration expects to issue roughly 250 vouchers after a spring solicitation.¹⁵

F. Employ Anti-idling Technology at Truck Stops

As previously mentioned, diesel trucks create a local air quality issue for Sonoma County, as well as contributing to greenhouse gas emissions. Anti-idling technology could help to improve local air quality and reduce GHG emissions.

Tennessee: According to the U.S. Environmental Protection Agency (EPA), on average, each idling truck produces about 21 tons of carbon dioxide and 0.3 tons of nitrogen oxides annually. In 2009, the Tennessee Department of Transportation (TDOT) received a $2 million American Reinvestment and Recovery Act (ARRA) grant from the EPA to begin equipping truck stops across the state with truck stop electrification (TSE) technology that powers heating and cooling equipment and electrical appliances without idling the engine. One truck-stop project team, Eco Travel Plaza and East Tennessee Clean Fuels, won a $580,000 EPA grant to install TSE equipment for all 50 of the site’s truck parking spots. TDOT submitted its own proposal for a competitive grant program for additional truck stops along interstate highways. Their program was approved, and four truck stops were converted to TSE technology, with a total of 110 spaces. The technology is either owned by the truck stop, or technology companies own the equipment and have a revenue sharing arrangement with the truck stop. Three truck stops that TDOT worked with remain open; the fourth is under new ownership and planning to reopen with the technology that was installed with the grant money. Eco Travel Plaza’s owner, Dom Demko, worked with two TSE vendors, AireDock and Shorepower, and took the next step of installing solar panels to offset the electricity the new TSE would use. Money for the 35 kilowatt solar array installation came in part from the Solar Installation Grant Program, sponsored by the Tennessee Solar Institute, and part of Governor Phil Bredesen’s Volunteer State Solar Initiative, also funded by the ARRA. Demko also replaced most of the lighting at the truck stop with LED lighting. With the anti-idling technology in place, Eco Travel Plaza could reduce carbon dioxide emissions by 21,818 tons over the next 10 years and reduce nitrogen oxides by 337 tons and particulate matter by 10 tons. TDOT also looked at alternative ways to save costs and energy at the truck stops they were working with. One truck stop in White Pine got approval from the EPA to use refurbished steel for the support structure that holds the HVAC units, and with the savings from using refurbished steel instead of new, the truck stop was able to purchase solar technology. Alan Jones, manager of the Energy Policy Office in the Long Range Planning Division in the Tennessee Department of Transportation thinks, going forward, it makes sense to focus on the technology vendors and encourage them to make contact with the truck stops. “I think that the best strategy is to work with the technology vendors, [to] get them to work with the truck stops,” said Jones, who acknowledges that these kinds of energy developments are often of little concern to independently owned “mom-and-pop” truck stops with a small staff.¹⁶

3.2 Expand transportation demand management (TDM) programs.

Background

Transportation Demand Management is one of the less expensive approaches to reduce emissions from transportation because it maximizes the use of the existing infrastructure. According to the Victoria Transport Policy Institute,

Transportation Demand Management (TDM) is a general term for strategies that result in more efficient use of transportation resources.\(^\text{17}\)

Sonoma County has several TDM programs including Safe Routes to School, the Carma Ridesharing Program, and the Eco2School Program for high school students. Because these programs depend on outside funding, sustainable sources of funds must be found for them to continue. The City of Santa Rosa is the only jurisdiction in Sonoma County currently offering a TDM program; it is called “Free Ride.” The following strategies could be employed in Sonoma County to further maximize existing infrastructure to reduce GHG emissions from transportation.

### Strategies to Consider:

A. **Use Public Parking Facilities for Car Share**

Santa Rosa’s downtown may be an especially good candidate for using public parking for car sharing. Other downtown areas within the County might work as well.

The City of Berkeley has a partnership with City CarShare that makes CarShare vehicles a part of the City fleet during business hours and they then revert to public use for non-business hours. The partnership enables the City to retire some City-owned vehicles, saves money because City CarShare provides the maintenance, and the vehicles are fuel-efficient. It’s a successful partnership.\(^\text{18}\)

Montgomery County’s Department of Transportation (MCDOT) issued an RFP for use of public parking facilities by car share companies. Two vendors were selected and negotiations regarding terms, conditions, and specific locations of spaces are being conducted. Car sharing vendors are coordinating with the MCDOT on outreach to the community and should be able to begin using County parking spaces by second quarter of 2011.\(^\text{19}\)

B. **Use Transportation Access Plan Agreements (TAPAs)**

A Transportation Access Plan Agreement may be very useful to the cities within Sonoma County. Such an agreement could help cities to develop a pedestrian- and biker-friendly streetscape, minimize land gobbled up by parking, expand traffic management tools, and expand the use of transportation demand management (TDM) by businesses and institutions.

The City of Boston Zoning Code (Article 80) requires developers of large projects, greater than 50,000 square feet, to sign a Transportation Access Plan Agreement (TAPAs) with the Boston Transportation Department. Boston City Government has used this tool effectively for many years—and will continue to use it, now in conjunction with Complete Street Guidelines—to develop the streetscape, keep down parking capacity, expand

\(^\text{17}\) [http://vtpi.org/tdm/]

\(^\text{18}\) Email from Timothy Burroughs, Climate Action Coordinator, 11/1/2013

traffic management tools, expand bicycle infrastructure, and expand the use of transportation demand management (TDM) by businesses and institutions.  

C. **Partner with Employers to Buy Down the Cost of Transit and Vanpools for Their Employees**

The County of Sonoma and the cities within it could partner with employers to buy down the cost of transit and vanpools for their employees, thus encouraging lower-carbon commuting.

**Montgomery County**’s Commuter Services Section (CSS) is continuing to develop and implement transportation education and outreach campaigns targeted to businesses in the County with the goal of promoting the use of commuting modes other than the single occupant vehicle (SOV). Through its FareShare and Super FareShare programs the County partnered for a number of years with employers to buy down the cost of transit and vanpools for their employees, thus encouraging them to use these lower-emission commuting options. While the FareShare and Super FareShare programs have now been suspended due to budget constraints, most of the employers who were participating in them have continued to offer transit benefits to their employees. In addition, CSS continues to conduct outreach to employers to encourage them to offer either direct or pre-tax payroll deduction transit benefits. CSS recently published a brochure designed to promote participation in these benefit programs by employers and employees. The brochure has been posted on the CSS website and will be distributed to businesses and related organizations throughout the County.

**Silicon Valley**’s Valley Transportation Authority (VTA) EcoPass program charges employers between $7.50 and $120 per year per employee, instead of the usual $990 per year for a transit pass. The result has been a 19 percent decrease in parking demand at employers participating in the program. Neighborhood EcoPass programs apply the same principle to residential developments.

D. **Create a Commuter Benefits Ordinance**

A commuter benefits ordinance in Sonoma County could go a long way towards reducing carbon emissions from commuting to work. A program for Sonoma County employees is under development and could eventually be used as a model for other programs.

**San Francisco**’s Commuter Benefits Ordinance has seen great success. The second annual report on the San Francisco Commuter Benefits Ordinance confirms the program is successful in reducing the number of single occupancy vehicle commutes to and from San Francisco. The 2012 Annual Report found:

- The Ordinance continues to influence the creation of commuter benefits programs, both locally in San Francisco and nationwide
- 34 percent of San Francisco employees are participating in commuter benefits programs at work
- Employers are increasingly offering multiple benefits, such as a combination of a pre-tax deduction benefit and an employer-paid subsidy
- The Ordinance has contributed to an estimated reduction of 455,000 metric tons in carbon emissions from commute traffic in 2011 and 2012

E. **Create Tax incentives for Employers and Employees who Offer/Accept Compressed Work Weeks**

Encouraging a compressed work week could remove a significant number of cars from the road during commute hours in Sonoma County. The County may want to consider working on a program in conjunction with the County of Marin where many Sonoma County residents commute.

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King County Metro, WA, notes that in downtown Bellevue, FlexPass is responsible in part for a 24 percent drop in drive alone commutes from 1990 to 2000 (81 percent drive alone mode share to 57 percent).\(^{24}\) Compressed workweeks may reduce VMT by as much as 7-10 percent. A compressed workweek may be comprised of four days a week for ten hours per day instead of five days for eight hours. It’s important to incentivize employees to take advantage of the offering, as studies indicate that many employees do not.\(^{25}\) A King County Metro FlexPass costs $65 per year per employee for employers compared to the normal annual cost of $396-1584.

F. Offer a Universal Transit Pass through Employers

Sonoma County’s bus systems must be well integrated to create a user-friendly experience for potential bus commuters. Creating a pass that helps to achieve this integration may help attract new riders to commute to work by bus.

The City of Boulder has the "EcoPass," an annual RTD (Regional Transportation District) transit pass for unlimited regional, express, local bus and light rail service throughout the Denver and Boulder regions. Funded by Boulder’s energy tax, the EcoPass is purchased by employers for full-time employees, with an option to include part-time employees. The EcoPass is valid every day of the year, through December 31 of the current calendar year. According to the EcoPass website, EcoPass holders are 5-9 times more likely to ride transit than non-EcoPass holders.\(^{26}\) Since the program was implemented, the Eco Pass has reduced the drive to work mode share by 36 percent. The Eco Pass program alone has also reduced commuter parking demand by 850 spaces, according to Boulder's Downtown Management Commission.\(^{27}\)

3.3 Require that growth in new and existing developments be zero-carbon, i.e., energy efficient and renewable energy generating, city-centered, walkable, bikable, transit-oriented, and mixed-use.

Background

Sonoma County has a mix of sprawl and mixed-use transit-oriented development strategies. Progress has been made, but great opportunities for improvement exist.

Strategies to Consider:

A. Use Smart Codes
B. Revitalize Downtown Areas
C. Identify Vacant Office Parks and Rezone for Mixed Use
D. Employ High-density, Mixed-Use, Transit-Oriented Development
E. Commit to Investing in One Transit-Oriented Development Project Every Year
F. Take a Comprehensive Approach to Transit-Oriented Development
G. Develop A Complete Neighborhoods Ordinance
H. Develop A Complete Streets Program
I. Institute Mixed-Use Sector (General or Comprehensive) Plans
J. Use Parallel Codes
K. Create a Transfer of Development Rights (TDR) Program

\(^{25}\) [Victoria Transport Policy Institute: http://www.vtpi.org/tdm/tdm15.htm](http://www.vtpi.org/tdm/tdm15.htm)
\(^{26}\) [http://boulderecopass.com/overview.html](http://boulderecopass.com/overview.html)
L. Create EcoDistricts
M. Seek Green Trip Certification for New Developments

A. Use Smart Codes

Sonoma County can make great strides towards more compact biker- and pedestrian-friendly development by using the SmartCode. The SmartCode, a concise template released in 2003 and continually updated, is a model ordinance flexibly written for towns, cities, regions, and private developments. It requires calibration for local conditions. The SmartCode v9 and Manual was published to aid calibrators and planners and is available from New Urban News. SmartCode Version 10 has a modular structure making it easier for a jurisdiction to assemble the precise code it needs. The SmartCode differs from some other form-based codes in that its community-scale and block-scale articles are written explicitly for zoning. Zoning reform is essential to allow walkable mixed-use neighborhoods, thereby combatting sprawl, preserving open lands, and reducing energy use and carbon emissions.28

Miami’s Miami 21 is a form-based code that incorporates walkability, activation of the pedestrian realm, encourages alternative modes of transportation, and mandates green building for larger buildings. It also encourages mixed-use in the urban core.
Source: survey

One example within Miami’s code of how the city will be made more walkable follows:

For sites with three hundred and forty (340) feet Frontage length or more, a cross-Block passage shall be provided as follows: If the Frontage Line of a site is at any point more than three hundred and forty (340) feet from a Thoroughfare intersection, the Building shall provide a cross-Block Pedestrian Passage. If the Frontage Line of a site is at any point six hundred and fifty (650) feet from a Thoroughfare intersection, a vehicular cross-Block passage shall be provided. Such a cross-Block Passage may be covered above the first floor by a maximum of twenty-five percent (25 percent) of its length with Structures connecting Buildings, such as a terrace, pedestrian bridge or vehicular bridge. In T6-36, T6-48, T6-60 and T6-80 a Pedestrian Passage may be roofed and shall be lined with frequent doors and windows. 29

Two key goals for the City of Miami are to create walkable neighborhoods by encouraging mixed-use, activated pedestrian frontages and to enhance the City's tree canopy with a goal of a minimum of 30 percent tree canopy coverage, citywide, by 2020. While Luciana Gonzales of Miami’s Office of Sustainable Initiatives stated in the survey that there are no trackable mechanisms, she says that one can clearly see the difference by more pedestrian activity, more bicycles on the streets, and increased canopy.30

B. Revitalize Downtown Areas

Several of Sonoma County’s downtown areas have been revitalized in recent years. However, careful planning will be required to take full advantage of the coming SMART train’s transit corridor to maximize green space and make housing and shopping available from the public transportation system.

Atlanta’s BeltLine is the most comprehensive revitalization effort ever undertaken in the City of Atlanta and among the largest, most wide-ranging urban redevelopment and mobility projects currently underway in the United States. This sustainable project is providing a network of public parks, multi-use trails and transit by reusing 22-miles of historic railroad corridors circling downtown and connecting 45 neighborhoods directly to

28 http://www.transect.org/codes.html
29 v24-25 of Miami21 Code: http://www.miami21.org/PDFs/AsAmended_April2013_Volume1.pdf
30 Survey
each other. The Atlanta BeltLine is transforming the city with a combination of rail, trail, greenspace, housing and art. It will ultimately connect 45 intown neighborhoods, provide first and last mile connectivity for regional transportation initiatives, and put Atlanta on a path to 21st century economic growth and sustainability. The beauty of the Atlanta BeltLine is that it offers not only modern conveyances and exciting new development, but it is a living, breathing part of our community; not simply a means of getting somewhere, but a destination unto itself. It offers a chance for Atlanta to redefine what it is to be a neighbor, to be a community, to be a region, and to share all that it has to offer. First conceived as a 1999 master’s thesis by Georgia Tech student Ryan Gravel, the Atlanta BeltLine evolved from an idea, to a grassroots campaign of local citizens and civic leaders, into a robust new vision of an Atlanta dedicated to an integrated approach to transportation, land use, greenspace, and sustainable growth. The Atlanta BeltLine utilizes an existing 22-mile historic rail corridor that encircles the City of Atlanta as its foundation. Pedestrian friendly rail transit and 33 miles of multi-use trails will follow this corridor and spur off from it. The completion of the Atlanta BeltLine will bring together 45 intown neighborhoods and also link them to the entire metropolitan Atlanta region through a collection of transit offerings.31

C. Identify Vacant Office Parks and Rezone for Mixed Use

Like many communities in the U.S., Sonoma County has a surplus of office space that is lying fallow. One such space is the former State Farm campus in Rohnert Park, which was recently bought by a developer and is expected to become a mixed-use development adjacent to SMART. There are many vacant office parks around the County that could be rezoned for mixed-use, promoting more walkable communities.

In Woodbury in Saint Paul, Minnesota, plans for a 100-acre office park -- with a vacated State Farm building at the center -- were unveiled in October of 2013 in Woodbury. Elion, a Miami-based real estate investment company, announced plans to build a hotel, grocery store, office buildings and restaurants around the sprawling State Farm building at Radio Drive and Interstate 94. The site has been vacant for seven years, so the plans to develop it delighted city officials.32

In Montgomery County, the first installment of the new zoning code, the Commercial/Residential (CR) zone has been adopted. This zone allows a mixture of businesses and homes around transit served areas as specified by the master plan. The minimum requirements include open space, shading of parking lots and provision of bike parking and shower facilities. Property owners wishing to build up to the maximum density and height allowed by the master plan will need to provide additional benefits to the environment, connectivity, design and diversity. The draft of the code for residential and agricultural zones is in the formal comment period and the overall use tables and district descriptions are now available. Current drafts include sustainability requirements and have more provisions for distributed energy generation and urban farming.33

D. Employ High-density, Mixed-Use, Transit-Oriented Development

Implementing policies and programs to decrease transportation energy use through location-efficient development and improved access to additional travel mode choices will help to bring down emissions from transportation within Sonoma County. Cities can ensure that major destinations are accessible by more energy-efficient transportation modes through location-efficient zoning and policies that integrate transportation and land use planning. Local governments can expand residents’ transportation choices and create neighborhoods that support safe, automobile-independent activities. Cities can implement policies that discourage residents from frequent driving and encourage a switch from driving to other modes of transportation (e.g., public transit, bicycling, walking) through the use of transportation demand-management programs and car- and bicycle-sharing efforts.34

31 http://beltline.org/about/the-atlanta-beltline-project/atlanta-beltline-overview/
32 http://www.twincities.com/washingtoncounty/cl_24231564/woodbury-plans-unveiled-re-use-vacant-state-farm
33 Survey
34 Page 15 of ACEEE report: http://www.aceee.org/sites/default/files/publications/researchreports/e13g.pdf
The Portland region’s Urban Growth Boundary (UGB) continues to provide the critical foundation for the region’s land use and transportation planning. In place since 1980, the UGB is an essential component of the region’s ability to grow efficiently and to integrate housing and jobs with an affordable, low-carbon transportation system. The City and County have advocated for limiting growth of the UGB and in October 2011, the Metro Council adopted a conservative population forecast with a limited UGB expansion of 1,650 acres for residential land and 330 acres for industrial land. Note that VMT per person in Portland has not decreased.

Since 1973, state law has required every city and county in Oregon to have a Comprehensive Plan, which controls land use decisions in that area. Metro, Portland’s regional government, together with TriMet, the provider of public transportation for the Portland region, has guided investment in light-rail, mixed-use development and an integrated multi-modal transportation system. These efforts are a large part of local progress to date in reducing emissions and are fundamental to long-term success in achieving the 2050 goal.

This focus on high-density also means less space to heat. Each new person moving into the Portland metro area uses one-fourth the amount of living space that is used by each new person moving into the Washington, D.C. metro area.

The City of Chicago introduced and passed an ordinance to accelerate denser, less car-dependent development near transit stations. It went into in September. For commercial and mixed-use properties located near transit (either 600’ or 1,200’), the ordinance eliminates minimum parking requirements and offers density bonuses, allowing for smaller dwelling units and taller buildings. Studies have shown real estate sales prices in Chicago near transit outperformed the region by 30 percent, demonstrating a clear demand for real estate with easy access to transit.

Vancouver’s goal is that at least 50 percent of trips to be made by foot, bicycle and public transit. Between 2008 and 2012 there was a 10 percent improvement.

The City of Sacramento also sees mixed-use, transit-oriented development as key to reducing GHGs from transportation and land use. Their strategies include promoting sustainable growth patterns and infill development, creating more complete neighborhoods, encouraging mixed-use development projects, requiring sustainable development practices, ensuring quality development and project design. The City's overall goal in this category is to reduce vehicle miles traveled (VMT) per capita in new development by 35 percent, compared to statewide averages.

E. Commit to Investing in One Transit-Oriented Development Project Every Year

Land use changes take decades to happen. One way to expedite this transformation of the built environment is to make a quantifiable commitment to investing in transit-oriented development. As SMART gets up and running, the County can take steps to make sure that most investment dollars are funneled into projects with close access to SMART, instead of investments in outlying properties that perpetuate sprawl.

Philadelphia’s Southeastern Pennsylvania Transportation Authority has a goal of integrating with livable communities in its Sustainability Program Plan. SEPTA has committed to investing in one TOD project every year.

F. Take a Comprehensive Approach to Transit-Oriented Development

If Sonoma County wants transit-oriented developments to succeed, it must take a comprehensive approach.
According to the Institute for Transportation and Development Policy, “Rezoning a corridor to encourage mixed-use development, creating a comprehensive plan for the area, actively reaching out to investors, marketing the program, offering financial incentives — these elements of a strong official involvement directly predicted TOD success. If a government does nothing to support TOD along the transit corridor, there will be no TOD impact.”

G. Develop A Complete Neighborhoods Ordinance

Developing a complete neighborhoods ordinance would bring GHG emissions down by helping to make Sonoma County’s communities more walkable and bikeable. It would also bring vitality to the neighborhoods of Sonoma County, as evidenced by some of the downtowns that already exhibit many of the features of a city with a complete neighborhoods ordinance. These cities include Healdsburg, Petaluma, Santa Rosa, Sonoma, and Windsor.

The City of Portland’s draft Plan (released in October 2011 and available at www.pdxplan.com) features the concept of complete neighborhoods, particularly in the proposed Healthy Connected City strategy and the Economic Prosperity and Affordability strategy. Goals, guiding policies, actions and performance measures related to creating complete neighborhoods are found throughout the Portland Plan, and include such topics as neighborhood business vitality, access to housing (including aligning housing and transportation investments), promoting vibrant neighborhood hubs, developing neighborhood greenways, and coordinating planning and investments among public and private entities, among others. Developed by the City in partnership with twenty other partners, the draft Portland Plan includes 12 Citywide Measures of Success, one of which is complete neighborhoods.

H. Develop A Complete Streets Program

The County of Sonoma already has a plan to help make streets safer for pedestrians and bicycles. However, the program is not well-funded. The County can re-prioritize funding to make dollars available for things like a complete streets program that would help put pedestrians, bicyclists, and transit users on equal ground with drivers.

The Boston Complete Streets program, launched in 2009, aims to put pedestrians, bicyclists, and transit users on equal ground with drivers, and promote a vision of streets which are safe, attractive, and conducive to healthy, active transportation. The Complete Streets Advisory Committee, including City Hall staff, outside experts, and community stakeholders, is developing recommendations to ensure that Boston streets are:

- Multimodal—safe and equally accessible for all modes of transportation and for people of all ages and abilities
- Green—sustainable, energy-efficient, low-maintenance, and vibrant with plantings
- Smart—incorporating innovative technologies to improve efficiency and comfort

As a result of this program, the City of Boston has already:

- Approved a narrower minimum width (10 feet instead of 11) for vehicle travel lanes to accommodate wider sidewalks and more bicycle facilities
- Started using permeable pavement and rain gardens in sidewalks to allow storm water to seep directly into the soil
- Issued, or will soon issue, guidelines for on-street parking of bicycles, shared cars, electric vehicles, and scooters
- Established minimum sidewalk widths and clear zones for pedestrians
- Developed a new classification of city streets that makes location and use explicit
- Adopted a new multimodal approach to intersection analysis and design

In addition, in 2003, the City of Boston published a long-term transportation plan, Access Boston, which included important VMT reduction measures, including off-street maximum parking ratios, transportation demand management requirements for new developments, the foundation of a bicycle-lane network, and a slate of public transportation projects for implementation by MassDOT. 46

I. Institute Mixed-Use Sector (General or Comprehensive) Plans

Sonoma County could try a new type of General Plan — called a Sector Plan — that has fully mixed use land use designations and uses intensity and location of future mixed-use growth — as an alternative to the use separated traditional version. This type of plan should result in a GHG reduction in the built environment as compared to the standard General Plan that separates land uses. 47

St. Lucie County in Florida has “TVC” — a Comprehensive Plan amendment and Land Development Regulations overlay that applies to the agricultural area of North St. Lucie County. The TVC encourages a pattern of development that preserves rural character while providing for future growth. Using the principles of Traditional Neighborhood Design (TND), the strategy for new settlement in the undeveloped areas requires a sustainable growth pattern characterized by a mix of uses, building types and income levels as well as a pedestrian-friendly block and street network. The TVC preserves a significant amount of public open space, promotes strategies for viable future agriculture, and helps mitigate the environmental impact of new development in the area. 48

J. Use Parallel Codes

Parallel codes are land use codes that “float above” a piece of property until the landowner is ready to develop the land. At that point in time, the code “drops down” on the piece of property. Such codes have worked well in the American Southwest. Sonoma Mountain village created a Planned Development district that used this concept effectively as well. 49 Sonoma County could expand the use of this type of code to other developments.

K. Create a Transfer of Development Rights (TDR) Program

Sonoma County has more roads per capita than any other county in the state. Sonoma County is also the most parcelized county in the state. These two things perpetuate sprawl and create barriers to creating open space. Source: Sonoma County Transportation and Land Use Coalition

To alleviate these issues, the County could institute a TDR program. Landowners in less dense areas of the county could sell their development rights to builders in areas designated for more density. Low-density areas in the outskirts would not be allocated any development rights, and high-density areas towards the center and along urban corridors would be allocated high numbers of development rights. These rights would allow those property owners to build up and/or infill. One of the key components of a successful TDR program is allocating the right number of development rights at the right time. If too many rights are allocated in the urban centers early on, real estate prices will not hold and the program will not work. TDR can also be used to reverse development in flood plains and areas where the climate change impacts are likely to render the land uninhabitable. Some areas might become uninsurable and the County could offer a lifeline to those property owners who are willing to move. 50

County of Montgomery, MD is one of the most successful when it comes to TDRs. They have preserved over 72,000 acres under protective easements and 52,000 acres of that was from TDRs. This preservation happened in the face of development pressure, as they are contiguous with Washington DC. 51

46 Ibid
47 Email from Lois Fisher, Fisher Town Designs on September 10, 2013
48 http://www.stlucieco.gov/planning/tvc.htm
49 Conversation and email, Lois Fisher, Fisher Town Designs, September 10, 2013. Fisher also named the following communities with exemplary land use planning, ordinances, and smart codes: Hamden, CT; Ventura Smart Code; Hercules, CA; and Miami, Fl.
50 Conversation with Lois Fisher, Fisher Town Designs, November 6, 2013
51 Conversation with Rick Pruetz of Smart Preservation, September 3, 2013

Proven and Promising Climate Measures
From U.S. Communities for
Possible Application in Sonoma County
King County in Washington State has also had success with TDRs. They plan to preserve one million acres, despite doubling in population. The local government is not permitted to use redevelopment funds unless they have a TDR program. Affordable housing is typically exempt from this program. Furthermore, King County has a law that helps prevent the allocation of too many TDRs. 52

L. Create EcoDistricts

The County of Sonoma could designate some neighborhoods as “ecodistricts” and work to attract innovative clean tech companies to those areas, or even partner with EcoDistricts (ecodistricts.org). Sonoma Mountain Village is arguably an attempt to create an ecodistrict, but broke ground right as the real estate market crashed. As the market recovers, the County could find ways to support such districts, including Sonoma Mountain Village.

The City of Austin is partnering with EcoDistricts and applying EcoDistrict tools to benchmark and measure a downtown mixed use development project. The city is using the EcoDistricts Framework to coordinate activity among major property developers and city agencies to measure neighborhood sustainability performance in an area that will include the repurposed and iconic Seaholm Power Plant, affordable and market-rate housing, retail, a hotel, a new central library, transit and new green space. Boston, Portland, San Francisco, Seattle, and Washington D.C. are all embarking on projects using EcoDistrict services. 53

In New York City, in the aftermath of the Great Recession and the financial collapse, Mayor Michael Bloomberg and the city’s economic development agency realized the need to diversify the economy. A network of stakeholders from across industries agreed that the city needed more tech talent. The resulting Applied Sciences NYC initiative will bring three world-class technology campuses into the city, generating an estimated $33 billion in potential long-term economic impact from a public investment of only $130 million.

M. Seek Green Trip Certification for New Developments

While existing development represents the vast majority of building stock in Sonoma County, when new development happens, the County has an interesting tool to ensure that the development is as sustainable as possible. The GreenTRIP certification program rewards multi-family, mixed-use projects that apply comprehensive strategies to reduce traffic and greenhouse gas emissions. Projects meeting GreenTRIP certification criteria allocate less land for parking and create incentives for new residents to drive less and own fewer vehicles. By creating less driving and using less land for parking spaces, there’s space freed up for services, shops and more affordable homes. The first five GreenTRIP projects led to developers voluntarily offering to provide of 80,000 years of free transit passes and 24,000 years of CarShare for residents of GreenTRIP buildings. 54

3.4 Prioritize funding for active (non-motorized) modes of transportation.

Background

Sonoma County has a plan with many good ideas. However, many lack funding to implement them. Moreover, Sonoma County currently has no comprehensive method of tracking transportation funds, especially on an annual basis. Consequently, no comprehensive strategy exists for determining how best to allocate the county’s transportation funds. A rough overview of Sonoma County annual transportation funding and allocation sources follows:

- Measure M - major items are allocated as follows:

52 Conversation with Jeremy Criss, County of Montgomery, October 4, 2013
53 http://ecodistricts.org/projects/profiles/
54 http://transformca.org/GreenTRIP
Proven and Promising Climate Measures
From U.S. Communities for Possible Application in Sonoma County

- 40 percent for Highway 101, equal to about $8 million
- 20 percent for road maintenance, equal to about $4 million
- 15 percent for transit, equal to about $3 million
- Measure R allocated 100 percent to SMART, equal to about $30 million
- Coordinated Claim for Transit, equal to about $25 million
- TDA3/TFCA allocated for alternative modes, equal to about $1 million
- An unknown amount is received by cities and the county from gas tax subventions. It is allocated primarily for basic maintenance such as ditch clearing and minor pothole repair.
- STIP funds are used for local capital projects with regional benefit like Hwy 101 and SMART. About $15 to $25 million every two years is expected once the current debt is retired in about 2020.
- Other sources for local roads and active transportation from MTC equal about $20 to 25 million every two to three years depending on the program.
- One-time significant funding from State bonds for Hwy 101 expansion was spent and no more is anticipated. Similarly SMART received a number of one-time funds in addition to their sales tax revenues.
- Transit receives by far the bulk of the regular funding, a minimum of $58 million per year, a situation that is unlikely to change appreciably in the near term.55

Strategies to Consider:

A. Redirect Financial Resources into Implementation of Sonoma County’s Bicycle and Pedestrian Plan
B. Promote “Active Transportation”
C. Support Dedicated Bike Paths
D. Launch a Bike Share Program
E. Create a County Fleet of Bikes
F. Incentivize Employers to Install Trip-End Facilities
G. Create a Tenant Bicycle Parking in Existing Commercial Buildings Ordinance

A. Redirect Financial Resources into Implementation of Sonoma County’s Bicycle and Pedestrian Plan

Oakland has made supporting bike paths a priority. The City has built 30 miles of bikeways and 1,500 bike parking spaces in 2011 and 2012. Long-range efforts are guided by the City’s Bicycle Master Plan and publicized through the Bicycle Friendly Community program, a national program of the League of American Bicyclists.56

B. Promote “Active Transportation”

Sonoma County could focus resources on active transportation, which would support the development of healthy, active communities in the region. Over the last several years, Sonoma County has become somewhat of a cycling Mecca. Creating a bike-friendly network of roads not only creates a safe place to use a bicycle to get around, but also may have added economic benefits with the rise of a various cycling races which draw people to the region.

Multnomah County’s Communities Putting Prevention to Work (CPPW) grant has provided significant support for active transportation strategies and projects across the region. The CPPW grant has supported the

55 Email from Suzanne Smith, Executive Director, Sonoma County Transportation Authority, July 9, 2014
56 Survey
development of an equity framework in the Portland Plan that, once implemented, will help planners understand what policy changes and investments are needed to support the development of healthy, active communities in the region. The County is also working with Portland and Gresham to update Transportation System Plans for each city with a policy framework that will provide greater opportunities for active transportation, as well as playing a role on Metro’s Climate Smart Communities scenario planning to improve measuring how active transportation choices and investments impact the health of residents by incorporating an equity lens into this work.57

C. Support Dedicated Bike Paths

Sonoma County could focus more resources on creating dedicated bike paths to help cyclists feel safer and increase the number of people willing to try bike commutes. Dedicated bike paths can cut cycling injuries in half and attract many more people to try cycling to work, school, and other places.58

Minneapolis: Midtown Greenway—Minneapolis is often considered the best bike city in America. The Midtown Greenway is a 5.5-mile bicycle highway through the center of town. Following a sunken rail corridor with no major breaks in traffic, this path is almost entirely separate from pedestrian traffic and is busy with commuters year-round (plowed in the winter). The Greenway is also lit at night, so it's functional 24/7, and has emergency call boxes, police patrolling on bike, and its own suspension bridge.

Portland, Oregon: Vera Katz East Bank Esplanade & Springwater Trail Corridor—Named the country’s best biking city by Bicycling Magazine in 2012, Portland boasts one of the densest networks of dedicated bike paths, greenways, and "bike boulevards" in the country. The highlight of the 1.5-mile esplanade is a 1,200 foot "floating walkway"—the longest of its kind in the U.S. according to Portland Parks and Rec. 59

Seattle: Burke-Gilman Trail—This former rail trail is paved 27 miles. One of the most heavily ridden multi-use paths in the country, it's often called the "backbone" of Seattle's cycling infrastructure, and it offers flat terrain, beautiful views, and plentiful access points.

D. Launch a Bike Share Program

More than 500 cities around the world have started public bike shares.60 Many of these cities have more challenging weather than Sonoma County and yet, they have experienced success with their programs. A Bike Share program in one of Sonoma County’s downtown areas could act as a pilot for other downtowns.

Montreal’s self service bike rental program is the largest bike share program in North America with 5,000 bikes and 400 docking stations. After 3.3 million trips in 2010 alone, 1 percent of bikes had been lost or stolen. The program has expanded to Toronto.61

Chicago’s “Divvy” is a bike-sharing system with 4,000 bikes and 400 stations across the city. Divvy bikes can be rented from and returned to any station in the system, creating an efficient network with many possible combinations of start and end points. With thousands of bikes at hundreds of stations, Divvy will be available for use 24 hours a day, 365 days a year. The station network will provide twice as many docking points as bicycles, assuring that an available dock to return your bike is always nearby. Divvy is a program of the Chicago Department of Transportation (CDOT), which owns all of the system’s bikes, stations and vehicles. Initial funding for the program comes from federal grants for projects that promote economic recovery, reduce traffic congestion and improve air quality, as well as additional funds from the City’s Tax Increment Financing

58 http://www.theatlanticcities.com/commute/2012/10/dedicated-bike-lanes-can-cut-cycling-injuries-half/3654/
60 http://vancouver.ca/streets-transportation/public-bike-share-system.aspx
61 https://montreal.bixi.com/
program. Chicago’s “Divvy” is second largest such program in the country. The Streets for Cycling 2020 plan calls for a 645 mile bikeways network by 2020.

“With Chicago’s Complete Streets policy in place, the public way is looking very different in Chicago. It’s exciting to see a visual and physically engaging way to experience sustainability in a city.”
- Aaron Joseph LEED AP, Deputy Sustainability Officer, Office of the Mayor, City of Chicago

In the Washington, D.C area, Capital Bikeshare has over 1800+ bicycles. There are 200+ stations across Washington, D.C., Arlington and Alexandria, VA and Montgomery County, MD and bikes can be returned to any station. Citizens can join Capital Bikeshare for a day, 3 days, a month, a year or try a new daily key option, and have access to the fleet of bikes 24 hours a day, 365 days a year. The first 30 minutes of each trip are free. Each additional 30 minutes incurs an additional fee.

Boston’s bike sharing system, Hubway, provides over 100 stations and 1,000 bikes available in Boston, Brookline, Cambridge, and Somerville. Citizens can choose between an Annual Membership, Monthly Membership, 3-Day Pass or 24-Hour Pass and access the fleet three seasons per year (the system is shut down in the winter). The cost includes unlimited trips less than 30 minutes in duration, longer rides incur additional usage fees.

New York City has more than doubled bicycle commuting since 2007. During 2012, NYC planned for the launch of Citi Bike, which will be the largest and most ambitious bike share program in the nation. The CitiBike system was designed by New Yorkers. Since 2011, the City has held hundreds of meetings with stakeholders and all community boards in the program area to get their input, and hosted 31 meetings with business improvement districts, and other neighborhood and civic groups to gather feedback on station locations. Between January and May 2012, they hosted 14 community-planning workshops where New Yorkers could give additional feedback on which station locations would be most useful and why. They also received more than 10,000 station suggestions and more than 55,000 “supports” for these suggestions through an interactive Web portal launched to solicit inputs from New Yorkers. This spring, they began to roll out the first phase of the program, which will consist of 330 station locations and 6,000 bicycles. When memberships went on sale, more than 5,000 annual memberships were sold in less than 36 hours. The entire system is supported without taxpayer subsidy and is expected to create 170 jobs that will generate an estimated $36 million for the City’s economy each year.

In early 2014, the City of Vancouver will launch a network of shared bicycles available for short-term use for a fee. Bikes will be located at secure, easy-to-use, automated docking stations. The PBS system will be privately owned and operated.

In the Seattle area Puget Sound Bike Share (PSBS), a nonprofit partnership of public and private organizations, was formed in June 2012. In April 2013, PSBS selected Portland-based Alta Bicycle Share as its operator/vendor. Alta will work with PSBS to plan, launch, and sustain a regional bike share network beginning with approximately 500 bikes and 50 stations in Seattle. The program is anticipated to launch in 2014.

The City of Portland has a higher percentage of bicycle commuters than any other major U.S. city with a bicycle commute rate that is eight times the national average. The number of riders crossing bridges into downtown Portland has increased by double-digit percentages in each of the past four years. The City of Portland has selected Alta Bicycle Share as its bike share contractor. Its first task is to raise funds for the launch and operation of the bike share system. Portland Bike Share is scheduled to open in spring 2014.

62 http://divvybikes.com/about
64 http://www.capitalbikeshare.com/
65 http://www.thehubway.com/
67 http://www.portlandoregon.gov/transportation/bikeshare.htm
69 http://www.portlandoregon.gov/transportation/57983
70 Proven and Promising Climate Measures
From U.S. Communities for
Possible Application in Sonoma County
E. Create a County Fleet of Bikes

The County of Sonoma might benefit from a small fleet of bikes near the County Administration Offices to prevent car travel between buildings in this area.

San Francisco’s CityCycle allows City and County of San Francisco employees to use the CityCycle fleet to conduct work-related business and help reduce greenhouse gas emissions. The 2012 Annual Report \(^71\) found the program to:

- Decrease use of motorized vehicles for short trips. Once CityCycle was an available resource, City employees chose to ride a bike with greater frequency. Driving for trips up to three miles decreased by five percent, and driving for trips three to six miles decreased by six percent. Over 32,800 vehicle miles are reduced annually as a result
- Save money and reduce emissions. 1,360 gasoline gallon equivalents are reduced annually, reducing costs by $4,366 and CO2 emissions by 35,467 lbs
- Motivate employees to be healthy. Employees are most encouraged to bike because of the health benefits associated with cycling

F. Incentivize Employers to Install Trip-End Facilities

Washington, D.C.: According to a 2013 study titled, "Trip-End Facilities at Work and Bicycle Commuting in the Washington, DC Region" (funded by the U.S. Department of Transportation as part of the Research Initiatives Program of the Mid-Atlantic University Transportation Center), results of a 2007/2008 survey done in the Washington DC area indicate that bike parking and cyclist showers are related to higher levels of bicycle commuting, even when controlling for other explanatory variables. The odds for cycling to work are greater for employees with access to both cyclist showers and bike parking at work compared to those with just bike parking, but no showers at work. Free car parking at work is associated with a lower likelihood for bike commuting. This analysis is based on commute data of 5,091 workers in the Washington, DC area, where commuting accounts for 41% of all bike trips. \(^72\)

G. Create a Tenant Bicycle Parking in Existing Commercial Buildings Ordinance

Since March 2012, the San Francisco Tenant Bicycle Parking in Existing Commercial Buildings Ordinance encourages bicycling to work by requiring commercial property owners to provide secure bicycle parking, or allow tenants to bring their bicycles into the building. Passed in partnership with Supervisor John Avalos, the Building Owners and Managers Association (BOMA) and the San Francisco Bicycle Coalition (SFBC), the legislation assists in attainment of the goal of 20 percent of all trips by bicycle by 2020. This is part of the city’s larger goal of reducing greenhouse gas emissions by 25 percent below 1990 levels by 2017. The San Francisco Tenant Bicycle Parking in Existing Commercial Buildings Ordinance requires commercial property owners to:

- Allow tenants to bring their bicycles to their leased space, or
- Provide secure bicycle parking on-site, or
- Provide off-site bike parking access for tenants

The Ordinance applies to commercial properties housing tenants that provide goods and/or services to the public, and/or to the business community direct. \(^73\)

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\(^71\) [http://www.sfenvironment.org/article/sustainable-commuting-programs/commutesmart-reports](http://www.sfenvironment.org/article/sustainable-commuting-programs/commutesmart-reports)

\(^72\) ["Trip-End Facilities at Work and Bicycle Commuting in the Washington, DC Region":](http://katana.hsrc.unc.edu/cms/downloads/DeterminantsOfBicycleCommuting.pdf)

3.5 Integrate Climate Protection into General Plans

Background

A key component of reducing emissions in the realm of transportation and land use is to integrate climate protection strategies into the General Plans for the County. The California Air Pollution Control Officers Association (CAPCOA) offers guidelines for General Plan development to reduce greenhouse gases. The most relevant of these for Sonoma County are:

- Foster land use intensity near, along with connectivity to, retail and employment centers and services to reduce vehicle miles travelled and increase the efficiency of delivery of services through adoption and implementation of smart growth principles and policies;
- Improve the local jobs/housing balance to reduce vehicle miles travelled;
- Zone for appropriate mixed use development to encourage walking and bicycling for short trips, rather than vehicles;
- Link residential and commercial development to transit facilities;
- Reduce parking requirements to facilitate higher density development that fosters access by walking, biking and public transit;
- Identify potential sites for renewable energy facilities and transmission lines;\(^74\)

Many of these strategies are already being used by cities throughout the country and many are referenced below as recommendations.

Strategies in Sonoma County’s Comprehensive Transportation Plan (CTP) are congruent with the strategies of communities that have seen significant progress in the transportation sector. The CTP aims to reduce VMT per capita by 10% below current levels (2005) by 2035. Furthermore, the CTP recommends the following strategies to reduce VMT: transit-oriented development, transportation investment (density, diversity, design, destinations), infill development and carbon efficient design, address jobs-housing imbalance, encourage smaller neighborhood locations for daily goods and services, housing assistance, Travel Demand Management (TDM), public education/travel choice programs, promote telecommuting, promote school-based TDM, and implement car-sharing programs.

3.6 Use Pricing and Taxes

Background

Pricing and taxes are often not under local control, making them difficult tools for Sonoma County to use to affect change. However, Sonoma County could investigate the viability of a local fuel tax, as well as an ordinance to ensure that vehicle insurance is paid by miles driven. These two approaches would dis-incentivize driving, which could help to bring down emissions. These approaches also make sense from the standpoint that more frequent drivers use and cause more wear and tear on roads and thus, cost local governments more money. The County can also take steps to support this kind of pricing at the state level.

In Montgomery County, a fuel tax was established in 1971, essentially as a revenue generating measure. All of the tax revenues go into the County’s General Fund, which pays for all of the general services provided by the County government, including police, fire, roads, libraries, health programs, etc. The tax is levied against suppliers of building energy fuels only (electricity, natural gas, fuel oil, etc.) based on the units of fuel used (kWh, therms, gallons, etc.) and is passed onto individuals and businesses by each utility or fuel supplier. In FY14, the total revenues from the energy tax

are anticipated to be about $210 million. The tax provides the County with data that can serve as a readily available surrogate for a GHG inventory.\textsuperscript{75}

**In Multnomah County** in January and February of 2014, the Metro Policy Advisory Committee (MPAC) and Joint Policy Advisory Committee on Transportation (JPACT) agreed several elements should be included in their draft “Preferred Approach” for 2014. One of those elements is supporting vehicle insurance paid by the miles driven using state assumptions for pay-as-you-drive insurance.\textsuperscript{76}

### 3.7 Improve Public Transportation

**Background**

Sonoma County's bus system is mainly used by those who cannot afford cars. Displacing ridership in single occupancy vehicles with public transit ridership is key to putting a dent in transportation-related emissions. Investing in public transportation will be crucial to this effort. The North Bay Organizing Project is advocating the following very specific ideas for Public Transit in Sonoma County:\textsuperscript{77}

- Coordinate service between all transit operators (Golden Gate Bus, CityBus, Sonoma County Bus, SMART, etc.)
- Give bus passes to students (kindergarten through college)
- Improve Sunday and evening service
- Provide bus passes to people in homeless shelters
- Increase service to provide 15-minute headways
- See the Community Connector Bridge between SRJC and the SMART Station through to completion

The following strategies are informed by the successes of other communities in increasing ridership.

#### Strategies to Consider

**A. Track the Carbon Effects of Public Transit Ridership**

**B. Support SMART for Success**

**C. Create a Robust Online Presence with Many Tools to Help Transit Riders**

**D. Make the Bus Experience More User-Friendly**

**E. Consider Electric Buses When Replacing the Sonoma County Transit Fleet**

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**A. Track the Carbon Effects of Public Transit Ridership**

**In Philadelphia,** Southeastern Pennsylvania Transportation Authority (SEPTA) has been tracking emissions from Philadelphia's public transportation system. According to a Sustainability Annual Report released in January of 2013, the following savings were realized in 2012:\textsuperscript{78}

- 69,844,564: Pounds of carbon avoided thanks to ridership growth and congestion reduction
- 15,391,959: Pounds of carbon removed from operation of vehicles and infrastructure

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• 84: Average annual trips per capita taken on SEPTA
• 8.23: Pounds of carbon displaced per trip by the average SEPTA rider

Portland and Multnomah County have achieved considerable success in limiting emissions growth from transportation. Urban form and mobility policies have resulted in almost no increase in emissions from transportation since 1990. TriMet ridership has doubled since 1990, with increases every year. The regional light-rail system continues to expand; it now connects Portland to Clackamas Town Center, coinciding with the new rail loop through downtown Portland along the transit mall. 79

B. Support SMART for Success

In Sonoma and Marin Counties, Sonoma-Marin Area Rail Transit (SMART) is a passenger train and bicycle and pedestrian pathway project that will serve stations from Cloverdale in Sonoma County to the San Francisco-bound ferry terminal in Larkspur, Marin County. SMART’s environmental studies project 5,000 to 6,000 passenger trips per day will be made on the train and 7,000 to 10,000 daily trips will be made on the bicycle/pedestrian pathway. SMART claims that the rail project will take more than 1.4 million car trips off Highway 101 annually and reduce greenhouse gases by at least 124,000 pounds per day.

The SMART rail corridor parallels Highway 101, the only north-south transportation facility in the North Bay. Traffic congestion along this corridor has increased dramatically in the last decade and it is now ranked by Caltrans as one of the most congested freeways in the Bay Area. Over 80% of all North Bay commercial, residential and educational facilities are located along the SMART corridor.

The stations along the corridor are being designed to accommodate available feeder bus services, shuttle services and, in some suburban locations, park and ride facilities. Stations in the core areas of the three largest cities in the North Bay – Santa Rosa, Petaluma and San Rafael – are being designed with no park and ride facilities, with the idea that they will create more walkable downtowns. 80

Many resources have been poured into SMART to date. Ensuring that SMART realizes the kind of ridership that its advocates predict is the task at hand. Intermodal transportation may be a key piece to ensuring SMART’s success, given that many areas will not have park and ride facilities.

C. Create a Robust Online Presence with Many Tools to Help Transit Riders

Sonoma County Transit does have an online presence, but there is much room for improvement.

In Alameda County, AC Transit offers a Clipper pass. 81 Using a “clipper card” could help make riding the bus easier and make intermodal transit much more fluid and user-friendly.

Sonoma County is currently developing a clipper card. Supporting the clipper card with a user-friendly website would help to encourage robust ridership.

Portland’s TriMet has a very expansive and user-friendly website with many tools for riders to help them get where they need to go. The website includes a hub to purchase tickets, maps and schedules, stops and stations, a trip planner, a transit tracker, and service alerts. It also has a section that explains how to use the system, a blog for TriMet fans, and TriMet gear to install pride in Trimet users. 82

D. Make the Bus Experience More User-Friendly

80 http://www2.sonomamarintrain.org/index.php/what_is_smart/
81 http://www.clippercard.com/ClipperWeb/actransit/faq.do
82 http://trimet.org/
While Sonoma County now has wifi onboard, there are some other features that would greatly enhance the experience of riding the bus and make using the bus for commuting easier.

Seattle’s RapidRide buses have some key features that make them very user-friendly.83

- Inside the bus, the next stop is displayed on illuminated overhead signs
- RapidRide stations have electronic signs that tell how many minutes it will be until the next bus will arrive
- RapidRide stations include large maps of the routes showing all the stops and destinations.

E. Consider Electric Buses When Replacing the Sonoma County Transit Fleet

Sonoma County’s current fleet of buses use compressed natural gas. As Sonoma Clean Power gets up and running and local power sources become cleaner, switching to electric buses in Sonoma County will help reduce greenhouse gas emissions as well as improving local air quality.

For nearly a year, Utah State University has been operating a first-of-its-kind electric bus that employs inductive charging technology to recharge the vehicle’s batteries while it waits at a bus stop. The technology allows for the transfer of energy between two objects. According to Utah State University, the new technology achieved three basic performance metrics: 1. a power level up to 25 kilowatts; 2. greater than 90 percent efficiency between the power grid and the battery; and 3. a maximum misalignment of up to six inches. WAVE, Inc., a Utah State University spin-off company, worked in cooperation with the Utah Science Technology and Research Initiative’s Advanced Transportation Institute and hopes to launch its first commercial demonstration of the new bus technology later this year.84

3.8 Optimize Traffic Efficiency

Background

In Sonoma County, traffic signals are synchronized at some major intersections to support traffic efficiency and reduce idling times.

Montgomery County’s Department of Transportation analyzes roundabouts as an option when conducting traffic studies for modification of intersection traffic controls.85 The County of Sonoma may consider something similar, although the City of Cotati has outlawed roundabouts.

3.9 End Investment in Infrastructure that Increases Emissions from Transportation

Sonoma County is still investing significant funds in freeway widening and other projects that increase emissions. Ending investments in infrastructure that increase emissions from transportation and channeling those dollars into low-carbon alternatives such as the ones described above is key to reducing emissions from transportation. Millions of dollars leave the County each year to purchase fossil fuels to power Sonoma County’s transportation sector. Sonoma County can stop the outpour of money and start keeping dollars local by transforming the landscape and the fleet of vehicles used to travel across it.

Sustainable Transport Adoption

84 http://web1.ctaa.org/webmodules/webarticles/articlefiles/Fall13TransitNotes.pdf
The pace of adoption of sustainable transport systems will determine if Sonoma County can achieve its goals. Below is a graphic from EMBARQ showing the pace of adoption for various sustainable transport approaches. While not all approaches are expressed here, it shows a trend towards precipitous adoption of some of these methods around the world. Sonoma County must find a way to rise with this tide to reach its GHG goals.

86 "On the move: Pushing sustainable transport from concept to tipping point" by Dario Hidalgo and Heshuang Zeng. The City Fix, October 23, 2013: http://thecityfix.com/blog/on-the-move-pushing-sustainable-transport-concept-tipping-point-dario-hidalgo-heshuang-zeng/
Appendix D: Solid Waste

GHG emissions produced from the solid waste sector account for less than 2 percent of Sonoma County’s total GHG emissions.¹ Methane from the decomposing organic portion of solid waste is the largest producer of emissions in this sector. As organic material buried in the landfill decomposes it turns into methane, a greenhouse gas approximately twenty-five times more potent than carbon dioxide. Sonoma County residents and businesses generate a significant amount of solid waste for which they pay a considerable amount for disposal, suggesting that there is ample room for reducing emissions and saving money in this sector.²,³

For many years Sonoma County has worked to curb the amount of solid waste it sends to landfills. This effort has resulted in the diversion of over 60 percent of the county’s solid waste to composting and recycling markets through “blue can” and “green can” source separation.⁴ Although Sonoma County is known for its success in diverting solid waste from the landfill, it can do better, as other communities are demonstrating.

Key Recommendations:

<table>
<thead>
<tr>
<th>Recommendation</th>
<th>Communities Employing Recommendation</th>
<th>Sonoma County Status and Applicability</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.1</td>
<td>Work toward a zero waste program by maximizing recycling, composting, and diversion of organic material from the landfill.</td>
<td>Oakland, Portland, San Francisco, San Rafael, Seattle, Vancouver, Massachusetts</td>
</tr>
<tr>
<td>4.2</td>
<td>Capitalize on emerging opportunities to convert waste into energy</td>
<td>Fairmont, New York, San Jose</td>
</tr>
</tbody>
</table>

4.1 Work toward zero waste by maximizing recycling, composting, and diversion of organic material from the landfill.

Background

Sonoma County is disposing of about 358,000 tons of solid waste per year, of which 270,000 tons is processed by County facilities at a significant cost. Estimates range from $75 million to $150 million per year paid by ratepayers.⁶ The waste disposal system consumes energy and produces GHG pollution. GHG emissions in the solid waste sector are about 70,000 tons of CO₂ equivalent per year⁷, which is less than 2 percent of the total

² About 358,000 tons per year, of which 270,000 tons is processed by County facilities.
⁴ CalRecycle http://www.calrecycle.ca.gov/Profiles/County/
⁵ http://www.pressdemocrat.com/article/20130423/articles/130429850
⁷ Dave Erickson, derived from Sonoma County GHG data using the California Air Resources Board's Implementation of IPCC's Mathematically Exact First-Order Decay Model http://www.arb.ca.gov/cc/protocols/localgov/pubs/landfill_emissions_tool_v1_3_2011-11-14.xls

1

Proven and Promising Climate Measures
From U.S. Communities for Possible Application in Sonoma County
GHG emissions for the county. This level is approximately equal to the emissions produced by 13,000 cars on the road for a year. The County’s current solid waste policy is aimed at reducing the amount of waste that is disposed in the landfill. This has resulted in successful programs using “blue can” and “green can” source separation that have diverted over 60 percent of waste generated (about 600,000 tons) in the County to either recycling markets or composting. From a policy and implementation standpoint, this has been a successful approach for managing solid waste. However, there is much room for improvement that would yield benefits both for climate protection and for ratepayers.

Strategies to Consider:

A. Maximize Methane Capture at the Central Landfill

B. Institute a Construction and Demolition (C&D) Ordinance for Maximum Recycling and Reuse of C&D Debris Material

C. Expand Food Composting and Reduce Food Waste in Large Commercial Settings Through a Local Ordinance

D. Expand Residential and Institutional Food Scrap Collection and Decrease Garbage Service

E. Institute a Pay-As-You-Throw Program

F. Use Mandates for Recycling and Composting for Residential and Commercial

G. Ban Some Types of Waste in Garbage Bins

H. Set a Date to Achieve Zero Waste

I. Green the Garbage Truck Fleets

J. Adopt a More Aggressive Sustainable Purchasing Policy

A. Maximize Methane Capture at the Central Landfill

Sonoma County already captures some of its methane from the landfill, but there may be room for improvement. Upgrades to the capture system might result in significant GHG savings.

In the City of Vancouver, upgrades to the gas collection infrastructure at the landfill have resulted in a significant increase in gas capture efficiency and greenhouse gas reduction. 354,500 tCO2e were captured from the landfill in 2012. In 2012, the annual average gas capture rate was 53 per cent—well on the way to the target of 75 percent average efficiency by 2016. Methane, a by-product of landfill waste, is a greenhouse gas 21 times more potent than carbon dioxide.

B. Institute a Construction and Demolition (C&D) Ordinance for Maximum Recycling and Reuse of C&D Debris Material

The Cities of Sonoma County currently have a patchwork of C&D Ordinances that need to be made consistent if they are to work effectively. Currently, builders can simply drive to a city with more relaxed laws to dump their C&D debris. Sonoma County must use a countywide deposit system in conjunction with certified facilities if the ordinance is to actually deter people from dumping debris that could be recycled.

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9 70,000 tons/year x 2204.62262 pounds/metric ton and then divided by 11,450 lbs/car/year = 13,478 cars. US EPA http://www.epa.gov/otaq/consumer/f00013.htm
10 CalRecycle http://www.calrecycle.ca.gov/Profiles/County/
11 Henry Mikus, Sonoma County Waste Management Agency
The City and County of San Francisco has a Construction and Demolition Ordinance that requires maximum recycling and reuse of construction and demolition (C&D) debris material.\textsuperscript{13}

The City of San Rafael has also adopted a C&D Ordinance requiring 75 percent diversion.\textsuperscript{14}

C. Expand Food Composting and Reduce Food Waste in Large Commercial Settings Through a Local Ordinance

According to the 2007 Sonoma County Waste Characterization Study, about 27 percent of commercial garbage in Sonoma County is food waste totaling about 39,635 tons per year.\textsuperscript{15} Sonoma County currently does not require food composting at large commercial operations. Enacting an ordinance that requires food composting in commercial settings would dramatically reduce the organic waste going into the landfill and the associated methane emissions.

The State of Massachusetts recently put forward a law that will help prevent food waste at large food operations such as supermarkets, colleges, sporting and entertainment venues, hospitals and large restaurants - and then will reduce the environmental impact of waste that can't be avoided. These new regulations, scheduled to take effect July 1, 2014, are an attempt to address the country's $165 billion, 90 million metric tons of methane-generating food waste problem. The state's Department of Environmental Protection (DEP) recommends producing less waste, starting with a food waste audit. Once there's a baseline to improve upon, entities can modify purchase quantities and timing. The DEP then recommends donating useable food to local charitable organizations such as Lovin' Spoonfuls. They also suggest partnering with farmers to feed excess food to animals, as many will haul food waste away for free. Another option is to deliver unused food to local zoos for use as feed. Finally, the regulations require that venues producing a ton or more of food waste a week divert it from disposal by incineration or at landfills. Massachusetts estimates the 1,700 businesses or so covered by the regulations annually will divert approximately 200,000 tons of waste from landfills, or the equivalent of taking more than 41,000 cars off the road.\textsuperscript{16}

In October 2011, the City of Portland launched a new citywide residential food scrap collection program (www.portlandcomposts.com). Portland residents in single-family houses and buildings with four or fewer units can set out food scraps in their green Portland Composts! roll carts for weekly pickup. By putting all food scraps, including meat, dairy, bones, grains, cooked foods and even pizza delivery boxes, in the green roll carts, Portlanders can divert thousands of pounds of food scraps from landfills each year.

San Francisco's Food Service Waste Reduction Ordinance requires food vendors and restaurants in San Francisco to use compostable or recyclable to-go containers. All San Francisco food vendors, restaurants, delis, fast food establishments, vendors at fairs, food trucks, and all City facilities and contractors that sell prepared food in San Francisco must follow this law. Approved food service ware products include compostable products such as paper or other plant fiber, such as from sugarcane, rice, or bamboo. Polyethylene film coating on paper is currently accepted, but no foam coating. Also accepted are corn, soy, potato, or other plant starch based bio-plastics, such as “PLA” clear plastic that are labeled “compostable” and meet compostability standards (ASTM D6400). Bags and food service ware labeled “green”, “environmentally friendly”, “biodegradable”, “degradable”, “will decompose”, “photodegradable”, “made from corn starch”, or other unsubstantiated claims are not accepted. Recyclable products include: aluminum foil or trays and plastic containers and lids.\textsuperscript{17}

\textsuperscript{13} http://www.sfenvironment.org/zero-waste/recycling-and-composting/construction-demolition-debris-recovery
\textsuperscript{14} Survey
\textsuperscript{15} http://www.recyclenow.org/compost/comm_food_waste.asp
\textsuperscript{16} "Massachusetts businesses stay ahead of food waste ban" by Dana Gunders, Greenbiz.com, August 01, 2013: http://www.greenbiz.com/blog/2013/08/01/massachusetts-businesses-ahead-ban-food-waste?mkt_tok=3RkM5mbWWHf9WvsRokmzBZKXonjH1fsX5u8Wq61M%2F0ER3f0vrPUfgj14DSMBrl%2BSLdEYGlv6SgFSLHhEMa5qMn3 вокруг
\textsuperscript{17} http://www.sfenvironment.org/article/prevent-waste/food-service-waste-reduction-ordinance
In April 2010, the City of Vancouver started the first phase of a food scraps composting collection program by allowing houses and duplexes to add fruit and vegetable scraps to their Green Bins. In September 2012, the program was expanded to include all food scraps such as meat, baked goods, dairy products, and food-soiled paper. Starting in May, 2013, the garbage and organics collection schedules across the city were shifted to weekly Green Bin collection and bi-weekly garbage collection to further increase organic waste diversion. Early indications are that those areas that have been on the program for at least a month have reduced the garbage by 37 percent and increased compostables diverted by 60 percent. About 25,000 tonnes of organic waste is expected to be diverted away from the landfill each year, reducing greenhouse gas emissions by 3,000 tonnes per year.\(^\text{18}\)

**D. Expand Residential and Institutional Food Scrap Collection and Decrease Garbage Service**

Food scraps are an enormous source of waste in Sonoma County. In fact, about 35 percent of residential garbage in Sonoma County is food waste, totaling nearly 800 tons a week.\(^\text{19}\) Sonoma County now has food scrap collection at virtually all residential locations. However, the program could be expanded to include dairy, meat, and bones.

**In New York City** in September 2012, DSNY began a pilot program in 68 schools to separate organic waste for composting, and are planning to expand this program to all city schools. To date, the program has led to a diversion rate of 34 percent from Manhattan schools and 38 percent from Brooklyn schools participating in the pilot. The weekly collection through this program of more than 20 tons of organic waste will soon be processed into sludge at a Waste Management-operated facility on Varick Street, and co-digested with city wastewater at Newtown Creek wastewater treatment plant. This is part of a pilot anaerobic digestion program, in conjunction with the Newtown Creek wastewater treatment plant (WWTP).\(^\text{20}\)

In October 2011, the City of Portland launched a new citywide residential food scrap collection program (www.portlandcomposts.com). Portland residents in single-family houses and buildings with four or fewer units can set out food scraps in their green Portland Composts! roll carts for weekly pickup. By putting all food scraps, including meat, dairy, bones, grains, cooked foods and even pizza delivery boxes, in the green roll carts, Portlanders can divert thousands of pounds of food scraps from landfills each year. As part of the change, garbage service is now collected every other week. The blue Portland Recycles! roll cart and yellow glass recycling bin continue to be collected every week.\(^\text{21}\)

**The Cities of Mobile,\(^\text{22}\) Ottawa,\(^\text{23}\) Portland,\(^\text{24}\) and Tacoma,\(^\text{25}\) all now have every-other-week garbage collection. The City of Seattle** has set a 2015 goal of piloting a change to every-other-week garbage collection from single-family homes.\(^\text{26}\)

**E. Institute a Pay-As-You-Throw Program**

In communities with pay-as-you-throw programs (also known as unit pricing or variable-rate pricing), residents are charged for the collection of municipal solid waste—ordinary household trash—based on the amount they throw away. This creates a direct economic incentive to recycle more and to generate less waste.\(^\text{27}\) Sonoma County currently does not have a pay-as-you-throw program.

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19 http://www.reculinenow.org/compost/curbside.asp
22 http://www.cityofmobile.org/trashpickup/
24 http://www.portlandoregon.gov/bps/article/402952
27 http://www.epa.gov/epawaste/conserve/tools/payt/index.htm
PAYT Programs have been adopted by almost 7,100 communities in the United States and has led to the diversion of roughly 6.5 million tons of municipal solid waste (MSW) per year that would otherwise have been landfilled. Based on the computations, the PAYT programs currently operating in the US are leading to reductions of:

- 2.1-3.8 million metric tons of carbon equivalents annually,
- 7.8-13.3 million metric tons of carbon dioxide equivalents annually,
- 61-109 million MBTU3 annually
- 4.6-8.3 million tons of MSW from landfills annually.

The programs are available to about 25 percent of the US population and about 26 percent of communities in the US, including 30 percent of the largest cities in the US.28

F. Use Mandates for Recycling and Composting for Residential Solid Waste

A significant portion of waste from Sonoma County’s residential sector that could be recycled or composted is instead buried in the landfill. California now has a mandatory recycling law for commercial establishments. In contrast, Sonoma County’s residential sector lacks similar laws.

San Francisco’s Mandatory Recycling and Composting Ordinance requires residents to separate their recyclables, compostables, and landfill trash.29 Whether you work in a restaurant, hotel, office building, or anywhere in the city, San Francisco's recycling and compost collection program is available.30

G. Ban Some Types of Waste in Garbage Bins

Another approach to increasing recycling and composting is to simply ban recyclable and compostable items from garbage bins. This has not yet happened in Sonoma County.

The City of Seattle has set a 2015 goal of banning the following materials from residential and business garbage to increase recycling: asphalt paving, concrete, bricks, asphalt shingles, plastic film, clean wood, residential food, and compostable paper.31 The City also has a 2015 goal of a phased-in ban on the following construction and demolition waste from job sites and private transfer stations: recyclable metal, cardboard, plastic film, carpet, clean gypsum, clean wood, and asphalt shingles.32

H. Set a Date to Achieve Zero Waste

No deadlines for zero waste have been established in Sonoma County. Having a deadline to achieve this goal will help to spur action.

In San Francisco, total emissions from waste have decreased 33.4 percent since 1990 as more materials have been recycled and composted. Their current landfill diversion rate is 80 percent. San Francisco’s initial commitment to Zero Waste was made in 2007.33 San Francisco’s goal is zero waste by 2020.34

The City of Vancouver in Canada also has a goal to achieve zero waste.35

29 http://www.sfenvironment.org/zero-waste/recycling-and-composting
30 http://www.sfenvironment.org/zero-waste/recycling-and-composting
32 Ibid
33 Email from Calla Ostrander on 11/1/13, SF Environment
34 http://www.sfenvironment.org/zero-waste
The **Oakland** City Council adopted a Zero Waste Goal in 2006, calling for a 90 percent reduction in waste sent to landfill by 2020, with an environmental hierarchy to guide how the diverted material is managed through recycling and composting. The City’s Zero Waste Strategic Plan outlines strategies for meeting this goal. These strategies prioritize “systems” solutions to reduce landfilled waste, and expand waste reduction, recycling and composting programs. By pursuing the City’s adopted Zero Waste strategies, Oakland can help to create GHG reductions on the same order of magnitude as those related to transportation and building energy use. Oakland released an RFP for zero waste discards management services for the residential, commercial, industrial and government sectors in 2012. Services are scheduled to begin 7/1/2015.\(^{36}\)

I. Green the Garbage Truck Fleets

Sonoma County is currently serviced by NorthBay Corporation for garbage trucks. NorthBay has been investigating a cleaner fleet of vehicles, but so far has not taken action. The County could require any garbage truck fleet under contract to use compressed natural gas or another cleaner fuel source.

In **Fairmont City, Illinois** the company Waste Management is building a facility that will create pipeline-ready natural gas from its Milam Landfill in Fairmont City, Illinois. The processed renewable natural gas will be injected into the pipelines of Ameren Illinois for withdrawal at other locations, including some Waste Management facilities. Once there, it will be used to fuel truck fleets and other equipment that run on compressed natural gas (CNG). Waste Management is calling the plant the Renewable Natural Gas Facility and expects it to begin delivering gas to the pipelines in late summer 2014.\(^{37}\)

**The City of Portland** requires 19 residential garbage and recycling haulers to use 20 percent biodiesel, often called B20, in their diesel collection trucks, resulting in over 400,000 gallons of biodiesel usage annually.\(^ {38}\)

J. Adopt a More Aggressive Sustainable Purchasing Policy

The County of Sonoma currently has an environmentally preferable purchasing policy that gives the County the ability to award bids to green vendors or for green products if they are within 5 percent of the lowest bid. To be certified green, the vendor must meet independent third party certification. The County also has a local preference for goods policy that allows local vendors within 5 percent of the lowest bid a chance to match the bid, recognizing that using local vendors often means a reduction in the carbon footprint associated with long distance travel and that local vendors help support the local economy.\(^ {39}\) Sonoma County could give greater preference to green vendors by allowing a higher margin than 5 percent.

**Multnomah County** adopted a Sustainable Purchasing Policy in 2010 to use its purchasing power to reflect the community’s values. These values include an open and fair procurement process, best values for taxpayers, reducing negative impacts on the environment or on specific community groups or neighborhoods, and supporting the local economy. Sustainable purchasing (also called environmentally preferable purchasing) is an effort to spend public funds on goods and services that minimize negative environmental impacts, are fair and socially just, and make economic sense, now and in the long term.\(^ {40}\)

4.2 Capitalize on emerging opportunities to convert waste into energy

*Background*

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\(^ {36}\) Scott Wentworth, City of Oakland (survey response)  
\(^ {39}\) http://green-purchasing.sonoma-county.org/  
\(^ {40}\) http://web.multco.us/sustainability/sustainable-purchasing
Republic Services has a unique opportunity to partner with the County of Sonoma to realize solid waste diversion goals not only through recycling and composting, but also through waste to energy conversion for those organic materials that may not be compostable.

Strategies to Consider:

A. Consider Biogas Production From the MSW Using Anaerobic Digestion
B. Encourage Biomass Energy Conversion from Dairy Farms

A. Consider Biogas Production From the MSW Using Anaerobic Digestion

Republic Services could operate a Materials Recovery Facility at the Sonoma County Landfill that separates the organic materials out of the MSW stream. Republic would also work with the County haulers to operate a food waste collection program that is included with the organics. This organic waste could be used to feed an anaerobic digester built by Sonoma Clean Power in partnership with (Clean Energy Renewable Fuels) at the landfill site. The digester would produce biogas, which would be refined into pipeline quality biomethane. The clean, carbon neutral biomethane would then be shipped via natural gas pipeline to Sonoma Clean Power's combined heat and power generation systems built and operated in partnership with (local CHP developer). These systems, built onsite, would provide 100 percent carbon-free heat and power to Memorial Hospital, the Santa Rosa Mall and several other large commercial customers. The heat and power produced by these systems would also be used by thousands of residential customers in the adjacent areas. The landfill gas generation system currently in operation at the landfill would continue to be operated, but would provide heat for the digester to increase its efficiency, as well as to provide power for the MRF and digester. This system would produce carbon emissions reductions by a) diverting organics from the landfill and eliminating the methane that would otherwise be produced with nearly 100 percent efficiency (vs landfill capture systems that are usually only 75 percent efficient); b) creating 100 percent carbon free electricity that can serve both commercial and residential customers (displacing dirtier grid electricity); c) displacing natural gas used for heating, both hot water and building heat.41

The City of San José has recently started processing all of the City's commercial organic waste using the first commercial scale dry fermentation anaerobic digestion and in-vessel composting facility in the U.S.42

In Junction City, Oregon (outside Portland), a $4 million Green Lane Energy biogas facility was built in 2013. The plant composites organic waste such as food scraps, straw, manure and other materials to generate methane gas that is collected and burned to power a turbine and produce electricity. The system anaerobically ferments organic material to create methane-rich biogas, which is recovered to turn a turbine. Waste is trucked to a receiving building, where it is separated, ground down and processed into a mixture for fermenting. The processing machine removes packaging such as milk or yogurt cartons that might be contaminating the waste. The waste goes into a homogenization tank, where it sits for several days to ferment. It then is channeled into a large 1.2 million gallon digester that is constantly stirred, after which the material goes into a domelike structure where the methane is extracted. That gas is transferred into a biogas scrubber to remove impurities such as hydrogen sulfide and moisture. Once the gas is scrubbed, it is burned in a 16-cylinder, 2,000-horsepower engine. Much of the technology that's being used in the process is imported from companies in Sweden, Switzerland and Germany, including the digestion tank agitator, the waste intake sorter and engine, respectively. Some of the equipment, including the intake sorter, has never before been used in the United States.43

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41 Email from Dave Erickson, California Public Utility Commission, August 28, 2013
B. Encourage Biomass Energy Conversion from Dairy Farms

Sonoma County is an agricultural county that has many opportunities to produce energy from agricultural waste. The Sonoma County Water Agency (SCWA) has a “Farms to Fuels” project that is doing just this.\(^4^4\) However, there are many farms in Sonoma County with the potential to convert waste into energy that have not yet done so.

In LaSalle, Colorado a project will use a complete mix anaerobic digester system to produce up to 4,700 MMBtu of biogas daily, making it one of the largest anaerobic digester facilities in the United States. The anaerobic digestion system converts organic feedstock and dairy cow manure into raw biogas. The raw biogas is then processed into pipeline quality RNG. After being conditioned to pipeline grade, the RNG will be supplied to Sacramento Municipal Utility District (SMUD) through a 20-year Gas Purchase Agreement (GPA).\(^4^5\)

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\(^4^4\) [http://www.scwa.ca.gov/farms-to-fuel/](http://www.scwa.ca.gov/farms-to-fuel/)

\(^4^5\) [http://www.heraldonline.com/2013/09/05/5179891/cdf-renewable-energy-acquires.html](http://www.heraldonline.com/2013/09/05/5179891/cdf-renewable-energy-acquires.html)
Appendix E: Agriculture and Forestry

Introduction

Sonoma County’s forestry and agricultural sectors provide opportunities to sequester carbon. Preserving and expanding forests and agricultural lands protects Sonoma County’s iconic beauty as well as the climate. Sonoma County voters created and continue to support the Agriculture Preservation and Open Space District that has protected over 106,000 acres from development resulting in carbon sequestration, avoided emissions from habitat removal, and from avoided vehicle miles traveled. Additional lands have been protected by Sonoma County Parks, Sonoma Land Trust, and other non-profit organizations. Programs that encourage farmers and ranchers to follow sustainable practices help sequester carbon in soils and plants as well as reduce methane emitted by livestock and manure. Research currently underway, notably that of the Sonoma County Agriculture Preservation and Open Space District’s Climate Action through Conservation project, are likely to identify actions that will have a big impact on the reduction of GHG emissions in this sector.

Key Recommendations:

<table>
<thead>
<tr>
<th>Recommendation</th>
<th>Communities Employing Recommendation</th>
<th>Sonoma County Status and Applicability</th>
</tr>
</thead>
<tbody>
<tr>
<td>7.1 Support agricultural practices that increase carbon sequestration</td>
<td>Marin County, Snohomish County</td>
<td>Sonoma County has extensive rangelands and farmlands, as well as resources to spread best practices in sustainable farming and ranching</td>
</tr>
<tr>
<td>7.2 Support forestry practices that increase carbon sequestration</td>
<td>Arcata, New York, Philadelphia, Portland, Sacramento</td>
<td>Many of Sonoma County’s forests and orchards have been cut to make way for vineyards and suburban development. A reversal of this trend will be imperative to maximize carbon sequestration.</td>
</tr>
</tbody>
</table>

7.1 Support agricultural practices that increase carbon sequestration

Background

Sustainable agricultural practices increase the ability of the land to sequester carbon while enhancing other ecosystem services such as improved fertility, and improved soil and water quality. A big recent boost for action came from the Sonoma County Winegrape Commission that announced Sonoma County’s commitment to becoming...

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the nation’s first 100 percent sustainable wine region. This commitment will inspire others in the agriculture sector to follow suit. Sonoma County could tap its academic institutions, Sonoma State University and Santa Rosa Junior College, as well as the many innovative local farmers and ranchers for assistance in promoting sustainable farming and ranching practices.

Strategies to Consider:

A. Explore rangeland carbon sequestration
B. Provide technical assistance in sustainable farming for Sonoma County farmers

A. Explore rangeland carbon sequestration

Sonoma County has significant rangelands that might be substantial carbon banks. Learning from already existing projects, Sonoma County has an opportunity to use one of its greatest assets – open space – to sequester carbon.

In Marin County, the Marin Carbon Project was formed to establish the basis for soil carbon sequestration on local rangelands (grazing lands on ranches and wide open spaces). The Marin Carbon Project emphasizes the value of local soil carbon sequestration, to provide ecological and agricultural benefit to rural communities while making full use of educational opportunities in regard to climate change. The project is a collaboration of UC Berkeley, UC Davis, UC Cooperative Extension, Marin Organic, Marin Agricultural Land Trust, Marin Resource Conservation District, the USDA Natural Resources Conservation Service, and Nicasio Native Grass Ranch. It is also supported by the Marin County Agriculture Commissioner and the Environmental Defense Fund. The project has now completed soil surveys to establish pre-existing levels of carbon in Marin’s rangeland soils. This baseline data will allow the accurate assessment of how much carbon is sequestered over time. In this process, the project is helping to establish an accredited baseline rangeland soil carbon measuring methodology. This could help other soil carbon sequestration projects and rangeland ecosystems throughout California and beyond. Whichever land management practices prove to sequester carbon in a way that is economically viable, the Marin Carbon Project and its partners will help ranchers and rangeland managers maximize financial compensation available as a result.

B. Provide technical assistance in sustainable farming for Sonoma County farmers

Sonoma County has several institutions for higher learning, as well as a community of farmers versed in sustainability who can help to spread sustainable farming practices throughout the region.

In Snohomish County, Washington State University Extension provides the technical assistance to County farmers to help them be successful. The agriculture program is educating farmers on no-till and reduced-till practices that reduce fuel consumption by equipment. Cover crops and organic farming techniques that reduce use of petroleum-based inputs are also being taught as methods to reduce energy consumption on the farm. A project is being developed with the U.S. Navy through the City of Everett that could provide a much bigger market for biofuels. WSU is working with Snohomish County, the Tribes, and a wide variety of stakeholders to develop a “Sustainable Agriculture Program” that focuses on water conservation, soil health, and energy efficiency.

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2 http://www.sonomawine.com/blog/sonoma-county-become-nations-first-100-sustainable-wine-region
3 http://www.marincarbonproject.org/
Lands Strategy” for Snohomish County that balances the preservation of farmlands with habitat restoration objectives.  

7.2 Support forestry practices that increase carbon sequestration

Background

Many of Sonoma County’s forests and orchards have been cut to make way for vineyards and suburban development. A reversal of this trend will be imperative to maximize carbon sequestration while creating co-benefits such as restoring wildlife habitat, reducing urban heat island effects, and improving local air and water quality. Sonoma County already has experience preserving lands for carbon sequestration. Buckeye Forest, formerly known as Preservation Ranch, is part of The Conservation Fund’s North Coast Forest Conservation Initiative. Threatened by development and vineyard conversion, the Conservation Fund purchased the nearly 20,000-acre property so that the land could be managed sustainably for timber, carbon sequestration, and restoration of coho salmon habitat.  

In addition to preserving wild lands, planting new trees, especially in suburban settings, will also sequester carbon and offer co-benefits, including providing shade to reduce the need for air conditioning, improving air and water quality, and mitigating the urban heat island effect.

Strategies to Consider:

A. Continue to preserve forests that sequester carbon
B. Set and achieve a reforestation goal

A. Continue to preserve forests that sequester carbon

Buckeye Forest (formerly known as Preservation Ranch) in Sonoma County is the latest installment in The Conservation Fund’s North Coast Forest Conservation Initiative. Threatened by development and vineyard conversion, the Conservation Fund purchased the nearly 20,000-acre property in northern California in 2013. As owners, they vow to sustainably manage the land for timber, carbon sequestration and restoration of coho salmon habitat. More than a decade ago, the Fund set out to reassemble what was once a single forested property stretching nearly 30 miles along the rugged North Coast range. Over time, this land was divided and sold into multiple parcels, including Buckeye Forest. The Conservation Fund also purchased the Garcia River Forest in 2004 and the adjoining Gualala River Forest in 2011. The Buckeye acquisition completes the efforts to reunite the larger forest. Sonoma County must continue to prioritize the preservation of forests and to expand these efforts as a part of its carbon sequestration strategy. The County should consider a carbon offset program in conjunction with these efforts.

5 http://www.conservationfund.org/projects/buckeye-forest/
6 http://www.conservationfund.org/projects/buckeye-forest/
In **Arcata**, the Arcata Community Forest, established in 1955, is comprised of 2,350 acres of second growth redwood forest in Humboldt County. The forest generates money through its carbon offset program in partnership with Terrapass.7

**B. Set and achieve a reforestation goal**

Sonoma County has a lot of forested territory, but there is plenty of space for improvement, both in suburban settings and in previously forested areas. The County must set firm goals with deadlines, funding, and specific actions, such as changing zoning and providing incentives for preserving trees.

**New York City**’s goal is to plant one million trees in order to increase its urban forest by 20 percent. The City of New York will plant 70 percent of trees in parks and other public spaces. The other 30 percent will come from private organizations, homeowners, and community organizations.8

The **City of Philadelphia** has a very specific plan for increasing tree coverage to 30 percent in all neighborhoods by 2025.9 The plan includes launching a local carbon offset market, providing incentives for preserving large trees, revising the zoning code for trees in surface parking lots, prioritizing tree planting in low-canopy, high-crime areas, and establishing seasonal tree maintenance.

The **City of Portland**’s goal is to expand the urban forest canopy to cover one-third of Portland, and at least 50 percent of total stream and river length in the city meet urban water temperature goals as an indicator of watershed health.10 Over 7,000 trees were planted in Portland in 2011 through a variety of programs, including partnerships with Friends of Trees and the Youth Conservation Crew. The City’s Neighborhood Tree Stewards Program (a volunteer training course) provided participants tools and knowledge to lead urban forestry projects.11

The **City of Sacramento**’s goal in the Greenwise Action Plan is to plant 5 million trees by 2025. To reach that goal, 3 million trees will need to be taking root by 2020. The Greenwise implementation team will track progress on the Sacramento tree planting through the tree counter posted on the Sacramento Tree Foundation website.12

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8 [http://www.milliontreesny.org/html/about/about.shtml](http://www.milliontreesny.org/html/about/about.shtml)
12 Page 31 of the Greenwise Sacramento Regional Plan: [http://uptownstudios.net/greenwise/](http://uptownstudios.net/greenwise/)
Appendix F: Financing and Fees

Introduction

A theme that emerged during the development of Sonoma County’s 2008 Community Climate Action Plan was the importance of financing. Without it, expecting to implement solutions of any significance is like expecting to eat at a restaurant with no money to buy items on the menu.

Key Recommendations:

<table>
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<tbody>
<tr>
<td>6.1 Use proven and develop new financing mechanisms to accelerate implementation of recommended measures</td>
<td>Arcata, Boulder, Milwaukee, San Francisco, Santa Clara County, Seattle</td>
<td>Three financing solutions are being implemented in Sonoma County: Property-Assessed Clean Energy (Sonoma County Energy Independence Program), Pay As You Save, and Community Choice Aggregation. More financing tools are needed.</td>
</tr>
</tbody>
</table>

6.1 Use proven and develop new financing mechanisms to accelerate implementation of recommended measures

Background

Three financing solutions were highlighted in the 2008 Climate Action Plan: AB811 – Property-Assessed Clean Energy aka Sonoma County Energy Independence Program, Pay As You Save®, and Community Choice Aggregation. All three are being implemented in Sonoma County. In addition, Sonoma County is currently in the beginning stages of implementing the Sonoma County Efficiency Fund, another innovative financing solution for building energy efficiency.¹ While these solutions are promising, they are insufficient. Sonoma County must keep seeking and developing financing tools to help transform the marketplace and reduce emissions.

Strategies to Consider:

A. Put a Carbon Tax on Electricity
B. Create a Carbon Fund
C. Use Crowd-Funding
D. Employ Collaborative Procurement
E. Use a Revolving Fund Mechanism with Collaborative Procurement
F. Use a Solar Group Purchase Model

¹ [http://www.scwa.ca.gov/scef/](http://www.scwa.ca.gov/scef/)
A. **Put a Carbon Tax on electricity**

While a carbon tax has never been considered publicly in Sonoma County, several communities have implemented them with successful results.

**City of Arcata** voters in November 2012 passed Measure I to levy a tax on excessive electricity use in residential households. Passing with a vote of 68 percent to 32 percent, the measure assesses a 45 percent tax on residential household meters that use more than 600 percent of baseline electricity or more than an average of 3 residential households from 1 meter. The goal of the tax is to assist the City in meeting its adopted greenhouse gas emission reduction goals, to align the City of Arcata with emerging California energy policy, and to create a disincentive for excessive energy use in residential neighborhoods. In 2006, the City passed the Community Greenhouse Gas Reduction Plan, which established an emission reduction target of 20 percent below year 2000 levels by 2012. The excessive electricity use in the residential sector poses a serious challenge to the City’s efforts to decrease the amount of locally-generated greenhouse gas emissions.²

In the **City of Boulder**, residents and businesses are taxed based on the amount of electricity they consume. The City Council has the authority to set the rate for each user type within an approved range. Since July 2009, the rates have been set at the maximum allowable level. The CAP tax generated approximately $1.8 million in 2010. The CAP tax was renewed by voters on November 6, 2012.³ The tax revenue is used to fund climate protection efforts, despite having little effect on greenhouse gases.⁴

B. **Create a Carbon Fund**

Since July 2009, the **City and County of San Francisco** have levied a carbon fee on municipal airline travel. Revenue generated supports the San Francisco Carbon Fund (SF Carbon Fund), which is administered by SF Environment for projects that mitigate carbon emissions. The SF Carbon Fund awards grants and contracts to businesses, community-based organizations and neighborhood schools for projects that mitigate carbon and ultimately, improve San Francisco’s natural infrastructure and enhance the quality of the living environment. In prior funding cycles the SF Carbon Fund has made awards for biodiesel and urban forest pilot projects. The primary goal of 2013 SF Carbon Fund grant cycle is to mitigate carbon by increasing the number of healthy trees, expanding locally appropriate habitats and decreasing the energy needed to treat the City’s wastewater by reducing storm water runoff from the sidewalks and streets. Co-benefits of funded projects include contributing to health and well-being by reducing urban heat island impacts, flooding risks, expanding the production of locally grown food, increasing the walkability of San Francisco neighborhoods and providing equitable access to green space and restoring biodiversity. Incorporating green infrastructure in local neighborhoods is an investment in current and future generations of San Franciscans.⁵

Flights to and from Sonoma County’s airport produce significant emissions. Charging passengers a carbon fee could generate income that could fund carbon mitigation projects. The County could opt to make the fee voluntary or mandatory. If voluntary, the carbon fund would require substantial marketing to encourage travelers to purchase local “carbon offsets.”

C. **Use Crowd-Funding**

Crowd-funding is a newly emerging mechanism that allows early-stage companies or projects to be financed from many small sources over the Internet. Bloomberg estimates that if even one percent of the retail investment market is captured the opportunity is worth $90 billion dollars. Crowd-funding is ideal for small start-ups because it offers financing that traditional institutions have thus far failed to provide. Mosaic is an example of a new and relatively

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² [http://www.cityofarcata.org/node/1645](http://www.cityofarcata.org/node/1645)
³ [https://bouldercolorado.gov/pages/climate](https://bouldercolorado.gov/pages/climate)
successful crowd-funding hub online that specifically finances solar projects. Sonoma Clean Power could either partner with an existing operation or could model a similar program in-house.

D. Employ Collaborative Procurement

Sonoma County could employ a public-private procurement partnership that can finance renewable energy projects on publicly-owned facilities such as community centers, city halls, fire stations, police stations, office buildings, senior centers, libraries, and clinics.

In Santa Clara County, the Silicon Valley Collaborative Renewable Energy Procurement Project (SV-REP) is endeavoring to support the public sector adoption of renewable energy and reduce transaction costs. Joint Venture and the members of the Public Sector Climate Task Force have partnered with the County of Santa Clara, as lead agency, on a regional collaborative procurement. Through a collaborative and transparent process, the SV-REP addressed the informational barriers and limited resource capacities that are barriers to adoption of renewable energy and non-traditional financing approaches. This method conserved funds and accelerated the financing process and deployment of renewable energy technologies to achieve climate protection goals while supporting local economic development.

Phase I of the SV-REP Project is currently the largest multi-agency procurement of renewable energy in the United States. It involves 70 sites at 43 locations, and collaboration across 9 public agencies (County of Santa Clara, cities of Milpitas, Cupertino, Morgan Hill, Pacifica, and Mountain View, Town of Los Gatos, Santa Clara Valley Transportation Authority, and the South Bayside Waste Management Authority). The carport, rooftop, and ground-mounted systems will be located at community centers, city halls, fire stations, police stations, office buildings, senior centers, libraries, clinics, and other publicly-owned facilities. Some examples include South Bayside Waste Management Authority’s new recycling and waste transfer facility in San Carlos, Cupertino’s corporate yard, and the Santa Clara Valley Transportation Authority’s bus depots. Vendor selection for Phase I was finalized in early September 2010, and the selected vendors include SunPower Corporation (for the large system bundle), Borrego Solar (medium system bundle), and EcoPlexus (small combined and small rooftop bundles). In September 2011, Joint Venture, Alameda County, and the Contra Costa Economic Partnership entered into a partnership, the Regional Renewable Energy Procurement Project (R-REP), which is open to all public agencies in Santa Clara, San Mateo, Alameda and Contra Costa Counties.

Joint Venture partnered with Optony and the World Resources Institute on a Public/Private Sector Best Practices Guide for collaborative procurement of solar power.

The U.S. Environmental Protection Agency Green Power Partnership launched an effort based upon the SV-REP model in the metropolitan Washington, D.C., area.

More information about the Clean Energy Collaborative Procurement can be found at www.epa.gov/cecp.

E. Use a Revolving Fund Mechanism with Collaborative Procurement

Sonoma County could also increase its use of a revolving fund public-private partnership with collaborative procurement to fund renewable energy projects in the region.

In Santa Clara County, the Sustainable Energy and Economic Development (SEED) Program has established a public-private revolving fund. SEI in partnership with Optony Inc. is piloting a public solar PV procurement business model. The Sustainable Energy & Economic Development Fund (SEED Fund) initiative funded by the California Solar Initiative’s Research Design & Development Program aims to demonstrate an innovative public-

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6 https://joinmosaic.com/blog/90-billion-opportunity-crowdfunding-clean-energy#.UnZxpSTf9M
7 http://www.jointventure.org/index.php?option=com_content&view=article&id=189&Itemid=287
8 Ibid
9 www.wri.org/buying-solar
10 http://www.jointventure.org/index.php?option=com_content&view=article&id=189&Itemid=287
11 http://www.solarroadmap.com/regional-initiatives/north-bay/
private revolving fund to create a durable mechanism for enabling public participants to overcome adoption barriers with technical support that delivers significant reductions to overall project, transaction and administration costs. The SEED Fund initiative seeks to greatly extend the market potential of the collaborative procurement model by launching a revolving fund mechanism that will defer upfront costs for public partners and provide expert technical support, and in the process attract private investment to support this model in an ongoing manner, greatly expanding the scope of the initial investment by CSI and deployment of distributed solar in California. A $300,000 initial CSI grant, matched by $250,000 in private funding and supported by $91,150 of in-kind match, is designed to enable 10 or more public partners with up to 50 potential sites to identify and contract upwards of 5MW of solar contracts, a net increase of 75 percent over total regional public non-utility installed PV. This project aims to demonstrate that a 1-2 percent upfront investment in collaboration results in better pricing (10-12 percent total project cost savings), lower project risks with higher returns, reduced transaction costs and reduced administrative effort (resulting in 50-70 percent admin cost savings for participants).12

Green Bank in New York is a nascent entity that may also hold promise. New York is not as far along in the process as communities in California, but the Green Bank may have some lessons to offer for collaborative procurement. This description from the Governor’s website provides some detail: The Green Bank could assist in financing commercial and industrial solar projects through aggregation, credit enhancement and securitization. The Bank - potentially in partnership with one or more private financial institutions - could purchase loans from intermediaries and warehouse those loans until the pool attained a volume that is of interest to the capital markets. To reduce the perceived risk of marginal investment grade counter parties, the bank could provide credit enhancement for the loan portfolio in the form of a loan loss reserve fund or a subordinated debt instrument. To address the long loan tenors, the Bank could execute a debt securitization through which investors interested in holding long term debt, such as pension funds, could invest in longer term securities, while those banks preferring shorter loan terms would be able to exit their investments earlier. Access to the debt capital markets will allow clean energy projects to obtain financing at a lower cost of capital. The Green Bank is a key tool that the state will employ to facilitate a transition away from an unsustainable subsidy - dependent market toward a scaled and functional private market with waning dependence on government support. New York State entities spend approximately $1.4 billion annually to incentivize clean energy. Despite this level of spending, the State is not realizing its clean energy goals. One reason for this is that approximately 80 percent of this amount is disbursed in one-time use subsidies to help individual projects.13

F. Use a Solar Group Purchase Model

The local jurisdictions of Sonoma County should consider ways to use solar group purchase models to increase solar installations in the county. They can learn from several burgeoning group solar purchase models and determine the best ways to improve on them and support such efforts locally.

The Milwaukee Power Pack was a pilot program in 2012 that made solar more affordable for Milwaukee area customers. The program offered quality solar products from Milwaukee companies, installed by local certified professionals, at a low cost for customers. The Milwaukee Power Pack system included solar panels from Milwaukee’s own Helios Solar Works and an inverter from Ingeteam, both companies headquartered in the Menomonee Valley. Local Milwaukee solar companies provided a special limited-time pricing for the Milwaukee Power Pack program. The cost was also lower because installers bought product directly from the manufacturer with no shipping or handling fees.14

In the City of San Francisco, Solar@Work, is a group purchasing program for small- and medium-sized commercial properties in the San Francisco Bay Area. In July of 2013, the City of San Francisco launched Solar@Work, a program that offers solar energy systems to businesses in the Bay Area through a group purchase model. The program makes it possible for small- and mid-sized businesses and commercial property owners to pay less for solar power than they pay for electricity from the grid without local rebates. This can allow some business owners to save hundreds of thousands of dollars over the lifetimes of these solar power systems. It was estimated that Solar@Work would bring together interested participants to buy more than 2 Megawatts (MW) of solar power over 6 months. The Solar@Work model was developed by the City and County of San Francisco’s Department of

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14 http://city.milwaukee.gov/milwaukeeshines/Homeowner/Milwaukee-Power-Pack.htm

Proven and Promising Climate Measures
From U.S. Communities for Possible Application in Sonoma County

103
the Environment (SF Environment), in collaboration with the National Renewable Energy Laboratory (NREL), and Optony. SF Environment found that the main barriers keeping San Francisco businesses and commercial property owners from purchasing solar energy were upfront costs and lack of access to affordable financing. With American Recovery and Reinvestment Act funding from the U.S. Department of Energy’s Solar America Cities program and support from U.S. DOE’s SunShot Initiative, SF Environment proposed the Solar@Work “aggregation” approach, which combines multiple participants into one solar purchasing group, along with a standardized solar equipment lease. To help make this a reality, the program’s stakeholder group, led by the World Resources Institute (WRI), negotiated with solar vendors who could address the unique needs of businesses and property owners in San Francisco, and selected winning vendor, SolarCity.15

Overall the project engaged directly with 70 potential buyers (the original target was 20-50) across three Counties including San Francisco, Alameda and Santa Clara who were interested in the program and submitted their facilities for evaluation and potential participation in the program. About half of those were screened out for various reasons, but primarily due to unsuitable facilities (roofing or shading concerns), or not enough support from internal stakeholders to move forward. There was interest from some businesses in the financial district, however their rooftops were very limited and highly impacted by neighboring buildings. While in the industrial areas, older roofs were not sufficient for the added weight of solar PV given seismic concerns or were in need of replacement due to deferred maintenance. Currently, nine potential buyers are still under consideration, which could boost the total impact to nearly 1MW (1,000 kW). Lessons learned include: solar projects with great economics still compete with core business priorities and operational challenges; long-term concerns persist in the uncertain economic climate; program participants have an existing social or sustainability focus; and the vendor community frequently treats this sector with a mass-market approach to sales.16

The City of San Francisco’s Solar@School program is a commercial solar group purchasing program designed to provide non-profit private schools in San Francisco with access to tax-related benefits and integrated purchasing options. SF Environment developed the model and the program was implemented by San Francisco Friends School with technical assistance from Optony that was made possible by funding from the Solar America Cities program. The program was the culmination of a year’s work with private schools to incentivize them to invest in solar, which included a solar financing workshop, a solar monitoring system grant, and a non-profit group purchase (Solar@School). The initial pool of over 100 candidate schools was obtained from SFE’s School Ed team. SF Environment staff conducted outreach to schools via letters, emails, and phone calls to each school. In general, the schools found the process to be an informative learning experience and were appreciative of the City’s effort to make it happen. All schools stated that the savings were not very compelling from first round of bids. However, Sonoma County could explore ways to create such a program and make it more attractive.17

San Francisco’s SunShares is an employee solar discount program offered by the San Francisco Department of the Environment and the Business Council on Climate Change. The City and County of SF, Blue Shield of CA, Genentech, PG&E, UCSF, and eBay, Inc. are participating in SunShares to help their employees living throughout the Bay Area and greater Sacramento metro area pool their buying power to secure significant discounts and a range of financing options that make installing solar on residents’ homes simple and affordable.18

Seattle’s City Light’s Community Solar project sold all of the 1800 Community Solar units available for purchase by their customers in a few weeks. They did not anticipate the overwhelming and fast response. They believe this is due to a few factors. Based on customer feedback from the first project at Jefferson Park, they lowered the price of each unit from $600 to $150. Declining costs of solar technology and installation, minimal structural costs and better than expected solar production at Jefferson Park allowed them to project a potential payback for Community Solar at the Aquarium. Lastly, Seattle has an affinity for its Aquarium and the preservation of their coastal environment.19

16 http://www.sfenvironment.org/article/solar/solar-financing-options
17 Ibid
18 http://mygroupenergy.com/group/sf sunshares
Appendix F: Tracking Progress, Building Awareness and Support

Introduction

To achieve a large scale goal such as climate protection, the system of planning and implementation must also include accountability based on measuring and reporting progress and adjusting actions as appropriate. Policymakers, community stakeholders, and implementers must know the goals, the current status, the way forward, and the responsible parties in meeting those goals. This ensures the support required to reduce emissions at the speed and scale that is commensurate with solving the climate crisis.

Key Recommendations:

<table>
<thead>
<tr>
<th>Recommendation</th>
<th>Communities Employing Recommendation</th>
<th>Sonoma County Status and Applicability</th>
</tr>
</thead>
<tbody>
<tr>
<td>7.1 Measure and report Sonoma County’s progress toward achievement of its climate protection goals</td>
<td>Berkeley, New York, Multnomah County, Oberlin, Portland, Vancouver, and many others</td>
<td>The Climate Protection Campaign has provided Sonoma County’s annual Greenhouse Gas Progress Report starting in 2004. Climate Action 2020 is planning to track progress with the County and the cities as part of its work.</td>
</tr>
<tr>
<td>7.2 Build Sonoma County’s awareness and support for climate protection</td>
<td>Multnomah County, Portland, and others</td>
<td>From 2003-2012, Sonoma County organized Climate Protection: Everybody Profits, an annual event to address progress on climate protection.</td>
</tr>
<tr>
<td>7.3 Consider consumption-based tracking</td>
<td>Multnomah County, Oregon, San Francisco</td>
<td>Sonoma County has not considered tracking emissions in this way before.</td>
</tr>
</tbody>
</table>

7.1 Measure and report Sonoma County’s progress toward achievement of its climate protection goals

Background

The Climate Protection Campaign has provided Sonoma County’s annual Greenhouse Gas Progress Report starting in 2004. Climate Action 2020 is planning to track progress with the County and the cities as part of its work. This on-going effort will be key to ensuring that Sonoma County is on track with its climate protection goals. However, tracking by itself is not sufficient to impel corrective action. The reports must be revisited on a regular basis, compared against the goals, and used to shape policy and programs that reduce GHG emissions.

The City of Berkeley’s online progress report is broken into categories and shows graphs that compare Berkeley’s current emissions with what is needed to meet their goals.¹

¹ [http://www.ci.berkeley.ca.us/climateprogress/](http://www.ci.berkeley.ca.us/climateprogress/)
Climate Action Plan Progress

Check out Berkeley's progress toward achieving its Climate Action Plan goals in the areas of: Transportation and Land Use, Building Energy Use, Waste & Recycling, Community Outreach, and Adaptation & Resilience.

The Berkeley Climate Action Plan (CAP) guides community-wide efforts to reduce global warming emissions and to achieve several other associated benefits, such as improved public health, increased energy affordability, and improved access to green jobs. The plan identifies 30 specific goals designed to help reduce Berkeley's community-wide global warming emissions 33% by 2020 from 2000 levels.

Core Strategies of the Berkeley Climate Action Plan:

- Transportation & Land Use
- Building Energy Use
- Waste & Recycling
- Community Outreach
- Adaptation & Resilience

Getting to 33% by 2020: Reaching our Greenhouse Gas Emissions Goal

**Where We Are Now...**

- Community-wide emissions decreased 8% since 2000

**Where We Are Going...**

- CAP strategies will achieve an estimated additional 15% reduction by 2020

**Where We Need to Go!**

- We need your help...
  - 10% more reductions needed to achieve 2020 target
New York City’s progress report includes updates to very specific actions with measurable results and the status of each milestone, arranged by category.²

<table>
<thead>
<tr>
<th>CREATE CAPACITY FOR NEW HOUSING</th>
<th>MILESTONES TO COMPLETE BY DECEMBER 31, 2013</th>
<th>STATUS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>2 Continue transit-oriented rezonings</strong></td>
<td>Continue to create opportunities for denser development in transit-accessible areas, in large rezonings including Sunnydale/Woodside, Bedford-Stuyvesant North, West Harlem, West Clinton, and East Forham Road</td>
<td>In progress</td>
</tr>
<tr>
<td><strong>2 Explore additional areas for new development</strong></td>
<td>Advance development and open space plans for the Staten Island North Shore</td>
<td>In progress</td>
</tr>
<tr>
<td></td>
<td>Identify additional potential infill opportunities on NYC parks and vacant land</td>
<td>In progress</td>
</tr>
<tr>
<td></td>
<td>Explore opportunities for use of underutilized MTA properties to create housing, economic development, open space, or other opportunities in order to enhance surrounding communities</td>
<td>In progress</td>
</tr>
<tr>
<td></td>
<td>Implement improvements in Hudson Yards to catalyze development</td>
<td>In progress</td>
</tr>
<tr>
<td></td>
<td>Unlock development potential of underutilized Seward Park sites</td>
<td>Completed</td>
</tr>
<tr>
<td></td>
<td>Reduce City government leased or owned space by 1,000 square feet</td>
<td>In progress</td>
</tr>
<tr>
<td><strong>3 Enable new and expanded housing models to serve evolving population needs</strong></td>
<td>Explore regulatory and legislative changes to allow the creation of safe and legal additional units in existing housing</td>
<td>In progress</td>
</tr>
<tr>
<td></td>
<td>Explore new housing models to promote smart growth and serve smaller households</td>
<td>Completed</td>
</tr>
<tr>
<td><strong>4 Develop new neighborhoods on underutilized sites</strong></td>
<td>Begin construction on 900 units of housing in Hunter’s Point South, Queens</td>
<td>In progress</td>
</tr>
<tr>
<td></td>
<td>Begin infrastructure construction and remediation for Willets Point Phase 1a, a mixed-use development including 400 housing units</td>
<td>In progress</td>
</tr>
</tbody>
</table>

In the City of Portland’s 2012 update, a color-coding system shows the progress of their actions and is arranged by category.³ In addition, The City of Portland’s Portland Plan includes neighborhood-scale metrics for walkability, active transportation, and household energy use.⁴

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⁴ Ibid, [www.pdxplan.com](http://www.pdxplan.com)
### BUILDINGS AND ENERGY

<table>
<thead>
<tr>
<th>Action</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Reduce the total energy use of all buildings built before 2000 by 25 percent.</td>
<td></td>
</tr>
<tr>
<td><strong>RED</strong>: Establish an investment fund of at least $50 million in public and private capital to provide early access to low-cost financing to residential and businesses for energy performance improvements. (City: SFP, Mayor: County: OS)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>In June 2010, the City established Clean Energy Works Oregon (CEWO) and charged the new company with the dual mission of relining carbon emissions and creating family supporting jobs. Since January 2011, Clean Energy Works Oregon (CEWO) has expanded its work to service financing programs throughout the City of Portland in Multnomah, Clackamas, Washington, Jefferson, Lincoln and Lake Counties. Over 1,000 homes have received whole home energy solutions since the beginning of the Clean Energy Works Portland plan. The jobs, which started in February 2011, created full-time construction jobs for the Carolina-based company. The City has already received early returns from this program, which includes energy savings, reduced energy costs, and reduced carbon emissions. The city also partnered with several Oregon lending institutions, sympathizing over $60 million in revenue from private sector capital. Over 40 Home Performance contractors are now participating in CEWO. These contractors have invested in a wide array of &quot;high-end&quot; markets including homes, farms, small businesses, and homes with a diverse pool of skilled workers. Workforce needs are high for this industry and CEWO contractors are achieving these high standards. One hundred percent of all homes have been built by minority and 31 percent of the homes have been worked on by minorities. Eighty percent of the contract dollars have gone to historically disadvantaged businesses. By 2013, CEWO plans to upgrade 6,000 single-family homes in Oregon, create 3,500 quality jobs and deliver energy savings of $270.12 million in electricity and $200.3 million in natural gas. The City is helping leading opportunities to support investments in commercial building energy efficiency and renewable energy.</td>
</tr>
<tr>
<td><strong>YELLOW</strong>: Require energy performance ratings for all homes to that ensure energy and economic savings. (City: SFP, Mayor: County: OS)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>CEWO has developed a preliminary home energy performance policy for Sonoma County. The proposal is pending the completion of the Energy Trust of Oregon's energy performance rating for existing homes, which is currently being developed and evaluated. The Sonoma Energy Agency (SEA) and the City of Sonoma have both established the criteria for energy performance improvements in the area. The SEA's program was initially unsuccessful and the City and City continue to monitor market-based programs in energy performance ratings in coordination of these actions at the local level.</td>
</tr>
</tbody>
</table>

**STATUS LEGEND**

- **RED**: Action has not yet been initiated and/or little progress has been made
- **YELLOW**: Action is underway, but may face obstacles
- **GREEN**: Action is on track for completion by 2012
- **BLUE**: Action is completed
The City of Vancouver’s progress is highlighted in their progress report as a matrix with measured progress by category. It includes a goal and target, indicator, baseline, current year, percent change improved over baseline, 2020 target, goal and target, highest priority actions underway 2011-2014, and percent complete as of June 2013. (The following shows only a portion of the whole table.)

<table>
<thead>
<tr>
<th>GOAL AND TARGETS</th>
<th>INDICATOR</th>
<th>BASELINE</th>
<th>2012</th>
<th>% CHANGE</th>
<th>IMPROVED OVER BASELINE</th>
<th>2020 TARGET</th>
</tr>
</thead>
<tbody>
<tr>
<td>GREEN ECONOMY</td>
<td>Total number of green jobs near 2010 levels by 2020</td>
<td>16,000</td>
<td>16,000</td>
<td></td>
<td>--</td>
<td>30,000</td>
</tr>
<tr>
<td>TARGET 1: Double the number of green jobs near 2010 levels by 2020</td>
<td>Per cent of businesses engaged in greening their operations over 2011 levels by 2020</td>
<td>7%</td>
<td>7%</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>TARGET 2: Double the number of companies that are actively engaged in greening their operations over 2011 levels by 2020</td>
<td>Total greenhouse gas emissions from Vancouver</td>
<td>3,100,000</td>
<td>3,127,000</td>
<td>-0.2%</td>
<td>Yes</td>
<td>1,840,000 CO₂ eq</td>
</tr>
<tr>
<td>CLIMATE LEADERSHIP</td>
<td>Total tonnes of CO₂ emissions from Vancouver</td>
<td>1,150,000 CO₂ (2011)</td>
<td>1,150,000 CO₂ (2012)</td>
<td>-3%</td>
<td>Yes</td>
<td>920,000 CO₂</td>
</tr>
<tr>
<td>GREEN BUILDINGS</td>
<td>Per cent mode share by foot, bike and public transit</td>
<td>42%</td>
<td>44%</td>
<td>10%</td>
<td>Yes</td>
<td>50% sustainable mode share</td>
</tr>
<tr>
<td>TARGET 1: Reduce commute trip time by 20% from 2007 levels</td>
<td>Total vehicle km driven per person</td>
<td>Not Available</td>
<td>Survey being developed</td>
<td>--</td>
<td>--</td>
<td>20% below 2007 levels</td>
</tr>
<tr>
<td>TARGET 2: Reduce commute trip time by 20% from 2007 levels</td>
<td>A total solid waste disposed to landfill or incinerator from Vancouver</td>
<td>480,000 tonnes (2008)</td>
<td>420,000 tonnes (2011)</td>
<td>-14%</td>
<td>Yes</td>
<td>240,000 tonnes</td>
</tr>
<tr>
<td>ACCESS TO NATURE</td>
<td>Per cent of city’s land base within a 5 min walk of a park, greenway or other green space by 2020</td>
<td>62%</td>
<td>62%</td>
<td>0%</td>
<td>Yes</td>
<td>80% of the city’s land base</td>
</tr>
<tr>
<td>TARGET 1: Enhance connectivity to public open space</td>
<td>Total number of additional trees planted</td>
<td>12,815 trees</td>
<td>12,815 trees</td>
<td>--</td>
<td>Yes</td>
<td>12,815 trees</td>
</tr>
<tr>
<td>TARGET 2: Plant 150,000 additional trees in the city between 2010 and 2020.</td>
<td>Total number of additional trees planned</td>
<td>12,815 trees</td>
<td>12,815 trees</td>
<td>--</td>
<td>Yes</td>
<td>12,815 trees</td>
</tr>
<tr>
<td>LIGHTER FOOTPRINT</td>
<td>Pro: Number of people employed by a City-led or City-supported project to take personal action in support of a Greenest City goal or to reduce levels of consumption (cumulative)</td>
<td>400</td>
<td>400</td>
<td>0%</td>
<td>Yes</td>
<td>0</td>
</tr>
<tr>
<td>CLEAN WATER</td>
<td>Total number of crashes not meeting drinking water quality standards and guidelines</td>
<td>0</td>
<td>0</td>
<td>0%</td>
<td>Yes</td>
<td>0</td>
</tr>
<tr>
<td>TARGET 1: Ensure the meeting the most stringent drinking water quality standards and guidelines</td>
<td>Total number of crashes not meeting drinking water quality standards and guidelines</td>
<td>0</td>
<td>0</td>
<td>0%</td>
<td>Yes</td>
<td>0</td>
</tr>
<tr>
<td>TARGET 2: Reduce per capita water consumption by 30% from 2004 levels</td>
<td>Total water consumption per capita</td>
<td>165 L/person/day (2004)</td>
<td>165 L/person/day (2012)</td>
<td>-30%</td>
<td>Yes</td>
<td>100 L/person/day</td>
</tr>
<tr>
<td>CLEAN AIR</td>
<td>Total number of crashes not meeting the most stringent air quality guidelines for Metro Vancouver, British Columbia, Canada, and the World Health Organization.</td>
<td>27 (2008)</td>
<td>27</td>
<td>0%</td>
<td>Yes</td>
<td>0</td>
</tr>
<tr>
<td>TARGET 1: Ensure the meeting the most stringent air quality guidelines for Metro Vancouver, British Columbia, Canada, and the World Health Organization.</td>
<td>Total number of crashes not meeting the most stringent air quality guidelines for Metro Vancouver, British Columbia, Canada, and the World Health Organization.</td>
<td>27 (2008)</td>
<td>27</td>
<td>0%</td>
<td>Yes</td>
<td>0</td>
</tr>
<tr>
<td>LOCAL FOOD</td>
<td>Total number of households served in Vancouver</td>
<td>5,640 food areas (2010)</td>
<td>4,160 food areas (2010)</td>
<td>26%</td>
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7.2 Build Sonoma County’s awareness and support for climate protection

Background

At present there is no forum in Sonoma County to showcase exemplary action and to acknowledge individuals, governments, businesses, and other entities that are responsible for achieving Sonoma County’s climate goals. Doing so would support them as well as be an inspiration to others. Such a forum can also bring the community together and build awareness and alignment for climate protection. Speakers could present key concepts and priorities. From 2003-2012, Sonoma County collaborated to produce Climate Protection: Everybody Profits, an annual event to address progress on climate protection. About 150 people each year attended these all-day events. RCPA could restart this event and give updates on Climate Action 2020. Elected leaders and staff would report their progress, and describe challenges they face and support they need. Success stories including money saved could be highlighted in creative ways that draw in the public. As RCPA sends out the call for updates from responsible parties, they can showcase city and county staff that have made exceptional progress. All material would be posted online.

In 2011, Multnomah County held a Climate Short Film Contest as part of its quarterly Sustainability Film Series, which asked community members to tell their stories about local impacts of climate change through short, engaging videos. Winning films were featured at an event in July 2011 that spurred community and media interest in the film contest and issues surrounding climate change. The films can be viewed at http://web.multco.us/sustainability/community-climate-shorts.

Twice a year, the City of Portland invites diverse community organizations to apply to host the ReTHINK workshop series and then conduct a community action project. The first workshop builds a basic understanding of climate change. The second and third workshops map back to the four action areas of the Climate Action Now! campaign. The City then grants the organization up to $1,500 to conduct a community action project linked to at least one of the climate action areas.

The City of Portland has held three Fix-It Fairs, attracting thousands of racially and socio-economically diverse participants. Over sixty city, county, state and community organizations provided expert information, hands-on demonstrations and over thirty how-to classes on various topics throughout the day. Specific carbon reduction related workshops included home weatherization, cutting energy bills, vegetable gardening, composting, tree care and all-season bicycling. The Fairs offered free giveaways such as high efficiency light bulbs and showerheads, as well as free bike repair and bike safety information for children and families.

The City of Portland continues to implement the public outreach campaign called Portland Climate Action Now! which focuses on four primary topic areas:

- Healthy Home: home energy use, weatherization, renewables, water conservation and landscaping.
- Getting Around: walking, biking, transit, carpooling, fuel efficiency, low-carbon fuels, vehicle maintenance and driving habits.
- Your Stuff: waste reduction, recycling, composting and thoughtful consumption.
- Food Choices: low-carbon food choices, gardening and eating local.

The primary outreach arm of the Portland Climate Action Now! campaign includes the website blog, which received over 42,000 visits in the past year. Climate change education and information continues to be included in the Master Recycler program curriculum and in the City’s ReThink workshops. The City delivered 12 Home Energy IQ workshops focused on tracking and managing home energy use, including eight workshops in underserved areas.

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7 Ibid
8 Ibid
9 Ibid, [www.portlandclimateaction.org](http://www.portlandclimateaction.org)
The Oberlin Project is a collaboration of the City of Oberlin, Oberlin College, and private and institutional partners to improve the resilience, prosperity, and sustainability of the community. The Oberlin Project's aim is to revitalize the local economy, eliminate carbon emissions, restore local agriculture, food supply and forestry, and create a new, sustainable base for economic and community development. The City and College have signed on to become one of 18 Clinton Foundation Climate Positive Development Program cities (one of only three in the United States), thereby committing to reducing Oberlin’s greenhouse gas emissions below zero. The City of Oberlin is on target to reduce its emissions by 50 percent of 2007 levels by 2015, with 90 percent of its electricity coming from renewable sources. The Climate Action Committee, a community-based group created by City Council, developed the 2013 Climate Action Plan as a roadmap for transitioning to a climate positive community.  

7.3 Consider consumption-based tracking

Background

Sonoma County’s greenhouse gas inventories have always used conventional methodology. This methodology, while relatively accurate in the sectors that it covers, does not include all emissions created by people living and working in Sonoma County. Some communities are attempting to get a more complete picture of their emissions by using “consumption-based inventories.” However, even in 2014, few consumption-based inventories have been performed in the United States and no standard has been set for assigning emissions to different categories. The Consumption-Based Emissions Inventory (CBEI) is one methodology that calculates the 'lifecycle' or 'embedded' emissions for the consumption or final demand of goods and services. CBEI’s calculation methodology is based on tracking financial flows and attributing greenhouse gases to final products sold to consumers for a particular region or city. Emissions are then calculated based on the dollars spent on goods and services purchased by households in the region and exclude goods produced within the region, but purchased elsewhere.

In August of 2011 the State of Oregon released a consumption-based greenhouse gas emission inventory that was the first of its kind. It was based on the Stockholm Environment Institute’s modeling analysis and estimates the greenhouse gas emissions released to make, transport, use and dispose of the goods and services Oregonians consume.

Other communities such as King County in Washington State make mention of their consumption-based emissions and how this lens affects their decisions both with procurement and with solid waste policies. From King County’s 2012 Strategic Climate Action Plan:

“In 2008, consumption-related GHG emissions in King County totaled more than 55 million MTCO2e – more than double the emissions produced within the county’s geographic boundaries...Residents, businesses, and governments can reduce GHG emissions associated with goods and services by choosing sustainable options, reducing the amount they purchase, reusing goods when possible, and recycling after use. King County is involved in these efforts through the solid waste management services and procurement efforts that the County provides, as well as through the County’s efforts to educate residents and businesses about ways to use less and recycle more.”

10 http://www.oberlinproject.org/
13 Page 33 of King County’s 2012 Strategic Climate Action Plan: http://your.kingcounty.gov/dnrp/climate/documents/2012_King_County_Strategic_Climate_Action_Plan.pdf
Appendix H:

- Cities and counties surveyed
- Sources list
- Email survey instrument
- Responses to email survey
- Notes from responses to phone survey
### Cities and Counties Surveyed, November 8, 2013

<table>
<thead>
<tr>
<th>Cities and counties to which we sent requests to take online survey (Total = 33)</th>
<th>Completed written survey? (Total = 19)</th>
<th>Completed telephone survey? (Total = 15)</th>
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<td>33. Washington DC</td>
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</table>
Sources List, November 8, 2013

City and County Contacts List (Please note that not all listed below were interviewed by phone.)

1. Ann Arbor: Matthew Naud, Environmental Coordinator, spoke 10/17
2. Atlanta: Aaron Bastian, Communications and Project Manager, spoke 10/1
3. Austin: Zach Baumer, Climate Program Manager, spoke 10/1
4. Arcata: Karen Diemer, Deputy Director, Environmental Services Department, spoke 10/1
5. Benicia: Alex Porteshawer, Climate Action Plan Coordinator, spoke 10/15
6. Berkeley: Timothy Burroughs, Climate Action Coordinator
7. Boston: Carl Spector, Executive Director, Air Pollution Control Commission
8. Boulder: Elisabeth Vasatka, Business Sustainability Coordinator; Ken Cairn, Senior Environmental Planner, Community Planning and Sustainability
9. Chicago: Joseph, Aaron, Deputy Sustainability Officer, Office of the Mayor
10. Chula Vista: Brendan Reed, Sustainable Communities Outreach Program, spoke 10/22
11. Davis: Mitch Sears, Staff Liaison, Department of Community Development and Sustainability
12. Fort Collins, CO: Kathy Collier, Program Manager, ClimateWise Program
13. Los Angeles: Haydee Urita-Lopez, Urban Planner; David Somers, Environmental Review Coordinator; Diane Kitching, Environmental Review Coordinator; Elizabeth Carvajal, Urban Planning and Public Health Specialist, Raimi + Associates, spoke 10/18
14. Marin County: Omar Pena, Sustainability Planner, spoke 10/15
15. Miami: Luciana Gonzales, Assistant to Director, Planning, spoke 10/1
16. Minneapolis: Brendon Slotterback, Sustainability Program Coordinator
17. Montgomery County, MD: Stan Edwards, Division Chief, Environmental Policy and Compliance, 10/1
18. New York City: Allan Cohn, Director for Climate and Water Quality, NYC Department of Environmental Protection
19. Oakland: Scott Wentworth, Energy Engineer
20. Oberlin: Kristin Brazuniass, Liaison to the Energy Committee and the Community Engagement Team of the Oberlin Project, spoke 10/18
21. Palo Alto: Shiva Swamantham, Manager, Smart Grid and Emerging Energy Technologies
22. Pasadena: Denver Miller, Principal Planner
23. Philadelphia: Sarah Wu, Outreach and Policy Coordinator
24. Portland: Metro Council: Peggy Morell, Senior Public Affairs Specialist
25. Sacramento: Yvette Rincon, Sustainability Program Manager; Julia Burrows, Executive Director, Greenwise
26. San Jose: Mike Foster, LEED A.P. BD+C. Supervisor - Energy and Solar Programs, spoke 10/15
27. San Luis Obispo: James David, Associate Planner
28. San Rafael: Cory Bytof, Volunteer & Sustainability Program Coordinator
29. San Francisco: Calla Ostrander, Climate Action Coordinator
30. Seattle: Tracy Magoon, Director, Office of Sustainability and Environment
31. Snohomish County: Lisa Dulude, Energy and Sustainable Development Analyst, Sonoma County Transportation and Land Use Coalition
32. Vancouver, Canada: Malcolm Shield, Climate Program Manager, Office of Sustainability

Additional Sources:
Brant Arthur, Climate Protection Campaign
Michael Boswell, Ph.D., City & Regional Planning, Cal. Polytechnic State University San Luis Obispo
Dave Erickson, California Public Utilities Commission
Lois Fisher, Fisher Town Designs
Justin Gerdes, Forbes Contributor
Woody Hastings, Climate Protection Campaign
Alex Hinds, Sonoma State University
J.R. Killigrew, ICLEI
Rick Pruetz, Planning & Implementation Strategies
Bruce Riordan, Elmwood Consulting
Andrew Seth, Climate Communities
Abby Young, Bay Area Air Quality Management District

Proven and Promising Climate Measures
From U.S. Communities for Possible Application in Sonoma County
Email survey instrument

Greenhouse Gas Reductions in Your Community

1. *Name of your city or county
2. *What actions have you taken to significantly reduced GHG emissions?
3. *If you can, please rank the 3 top most effective actions and their associated emission reductions, financial costs, and time needed for implementation.
4. Were these actions politically challenging in your community? If so, how did you overcome this?
5. How long did it take to start seeing a reduction in GHG emissions from these actions (as evidenced by lower fuel sales or other trackable criteria)?
6. Do you attribute the emission reductions to a Climate Action Plan?

* Response required

Screenshot:
Responses to email survey

Q1: Name of your city or county:
City of Arcata

Q2: What actions have you taken to significantly reduced GHG emissions?
1) completed several efficiency upgrades to City Facilities
2) Support our Energy JPA in on the ground programs such as free lighting assessments for businesses and energy assessments for homes followed by help with incentive applications and rebates for implementation of efficiency measures.
3) Passage of an excessive electricity tax - just implemented today. Taxes residential meter that exceed 600% above PG&E baseline.

Q3: If you can, please rank the 3 top most effective actions and their associated emission reductions, financial costs, and time needed for implementation.
I would only be listing individual projects such as LED street light retrofits here - I don't think that is what you are looking for.

Q4: Were these actions politically challenging in your community? If so, how did you overcome this?
So far our measures have all been supported politically. There was lots of community discussion regarding the tax but in the end a lot of support.

Q5: How long did it take to start seeing a reduction in GHG emissions from these actions (as evidenced by lower fuel sales or other trackable criteria)?
Trackable criteria is something we are struggling with now. The tax was easier than most programs to track but metrics is a hard to gauge for us for programs in the community.

Q6: Do you attribute the emission reductions to a Climate Action Plan?
I attribute our continued work to have a reduction plan. The programs that we work may not necessarily come straight from the plan but have an overall reduction goal and a plan that supports inventory updates and programs makes a big difference as council members and staff change overtime.
#2

**Collector:** Web Link (Web Link)

**Started:** Tuesday, September 24, 2013 11:27:21 AM

**Last Modified:** Saturday, October 05, 2013 3:11:56 PM

**Time Spent:** Over a week

**IP Address:** 162.89.0.59

**Q1:** Name of your city or county:

Austin

**Q2:** What actions have you taken to significantly reduced GHG emissions?

- Building Energy Efficiency codes and programs
- Large purchase of Renewable energy (RECs)
- Onsite solar PV programs
- Bicycle and pedestrian programs
- Recycling, Reusing, and Composting

**Q3:** If you can, please rank the 3 top most effective actions and their associated emission reductions, financial costs, and time needed for implementation.

- Building Energy Efficiency and codes
- Renewable Energy Credit purchases
- Recycling, reusing and composting

**Q4:** Were these actions politically challenging in your community? If so, how did you overcome this?

No, Austin has a supportive stakeholder base, we are typically under fire for not doing enough or achieving enough progress.

**Q5:** How long did it take to start seeing a reduction in GHG emissions from these actions (as evidenced by lower fuel sales or other trackable criteria)?

- Efficiency and solar happen immediately
- Bikes and Ped, maybe little or no benefit
- Recycling and composting, immediate but scope 3 and out of our control.

**Q6:** Do you attribute the emission reductions to a Climate Action Plan?

Yes, the Austin Climate Protection Plan is a resolution passed by city council in 2007, we report annually on progress and results from efforts laid out in that plan.
Q1: Name of your city or county:
City of Miami

Q2: What actions have you taken to significantly reduced GHG emissions?
In 2010, after five years in the making, Miami 21 was launched. Miami 21 entails a holistic approach to land use and urban planning. It provides a clear vision for the City that is supported by specific guidelines and regulations so that future generations can reap the benefits of well-balanced neighborhoods and a rich quality of life. Miami 21 is a form-based code that incorporates walkability, activation of the pedestrian realm, encourages alternative modes of transportation, and mandates green building for larger buildings. It also encourages mixed-use in the urban core. All of these factors ultimately impact GHG emissions.

Q3: If you can, please rank the top most effective actions and their associated emission reductions, financial costs, and time needed for implementation.
1. Creates walkable neighborhoods by encouraging mixed-use, activated pedestrian frontages (long term)
2. Goal to enhance the City’s tree canopy with a goal of a minimum of 30% tree canopy coverage, citywide, by 2020.
3. Regulations to require large scale buildings (anything over 50,000 square feet) to be minimum Silver LEED certified.

Q4: Were these actions politically challenging in your community? If so, how did you overcome this?
Yes, it took five years to build consensus, and get the plan approved. It required a great deal of communication to all stakeholders as well as political leadership.

Q5: How long did it take to start seeing a reduction in GHG emissions from these actions (as evidenced by lower fuel sales or other trackable criteria)?
There are no trackable mechanisms, however, one can clearly see the difference by more pedestrian activity, more bicycles on the streets, and increased canopy.

Q6: Do you attribute the emission reductions to a Climate Action Plan?
The City has several plans in place to ultimately achieve this goal. That includes a landscape ordinance, tree protection laws, green building regulations, a bicycle master plan, a tree master plan, and a climate action plan (MiPlan).
Q1: Name of your city or county:
City of San Luis Obispo

Q2: What actions have you taken to significantly reduced GHG emissions?
2. Implement General Plan policies that reduce GHG emissions.
3. Use sustainable facility upgrades.

Q3: If you can, please rank the 3 top most effective actions and their associated emission reductions, financial costs, and time needed for implementation.
1. Reduce the community waste stream to as close to zero waste as possible, with a 75% diversion rate by the year 2020. Expected: -7,440 MTCO2e, High cost, 5 to 10 yrs.
2. Increase the percentage of non-recreational trips that are made by bicycle. Expected: -4,818 MTCO2e, High cost, 10+ yrs.
3. Implement local programs and collaborate with the County and State, to improve energy efficiency in older building stock. Expected: -1,745 MTCO2e, Medium cost, 5 to 10 yrs.

Q4: Were these actions politically challenging in your community? If so, how did you overcome this?
Yes, especially efficiency improvements to existing buildings. We embarked on an extensive public outreach campaign, and changed the policies based on feedback.

Q5: How long did it take to start seeing a reduction in GHG emissions from these actions (as evidenced by lower fuel sales or other trackable criteria)?
Our CAP was just adopted August 2012 so we have yet to see statistically valid results.

Q6: Do you attribute the emission reductions to a Climate Action Plan?
Yes! However, many of the policies in the CAP were already covered in the Conservation & Open Space and Land Use Elements.
Q1: Name of your city or county:
Benicia

Q2: What actions have you taken to significantly reduced GHG emissions?
- Implemented 41 out of 117 Climate Action Plan strategies since 2009.
- Hired a CAP Coordinator in 2012 to implement CAP and measure progress.

Q3: If you can, please rank the 3 top most effective actions and their associated emission reductions, financial costs, and time needed for implementation.
Home Energy & Water Audits
- 26,809 lbs CO2, 51,163 kWh (2009-present)
- $393,000 allocated, $154,000 spent
- WatzOn implements the program for the City; City reviews reports and processes invoices one per month and annually.

Streetlight Retrofit Project
- 2,294 out of 2,342 streetlights retrofitted (96%) from high pressure sodium to LED and induction
- 59 CO2MT reduction (induction)
- 47 CO2MT reduction (LED)
- Bond funded ($12m), cost of streetlight retrofits approximately $80,000; managed by Chevron Energy Solutions, contract signed October 2010, lights completed April 2012; City Staff installed fixtures; staff time spent reviewing documents, tracking energy and cost savings, and installing/maintaining fixtures.

10-site City Facility Solar Project (1.67MW)
- 604 MTC02 reduced (March 2012 - October 2013)
- $9m estimated cost
- Contract signed with Chevron Energy Solutions 10/2012, solar operational March 2012; City tracks energy/GHG/cost savings and maintains systems.

Q4: Were these actions politically challenging in your community? If so, how did you overcome this?
Chevron Energy Solutions project was challenging because of the expense. Projected cost savings were used as tool to help persuade the community.

Q5: How long did it take to start seeing a reduction in GHG emissions from these actions (as evidenced by lower fuel sales or other trackable criteria)?
Solar and streetlight retrofits began reducing emissions as soon as installation was complete. CAP Coordinator was hired Feb. 2012 to track projects and full report was given to the City May 2013.

Residential Energy and Water audit program generated savings in first three months; savings were verified for some participants 1 year after audit.

Q6: Do you attribute the emission reductions to a Climate Action Plan?
Yes. All three actions are tied to CAP strategies.
Q1: Name of your city or county:
San Jose

Q2: What actions have you taken to significantly reduced GHG emissions?
San Jose adopted its Green Vision in 2007, which outlined 15 ambitious goals to reduce energy use, achieve zero waste from landfills, planting trees all while creating 25,000 clean tech jobs (http://www.sanjoseca.gov/index.aspx?ND=1417).
The City of San Jose has also adopted a Greenhouse Gas (GHG) Reduction Strategy in conjunction with the recently adopted Envision San Jose 2040 General Plan Update. The General Plan shifts development from single story buildings, to high density development along transit corridors (“Transit Villages”).

Q3: If you can, please rank the 3 top most effective actions and their associated emission reductions, financial costs, and time needed for implementation.
San Jose has nearly 60MW of installed solar and reduced community energy use by 12% which has resulted in 196,779 MTCO2 avoided since 2006.

Q4: Were these actions politically challenging in your community? If so, how did you overcome this?
Accelerating solar installations has been a priority for the current Administration. Permit streamlining and cost-recovery permit fees have helped advance this goal. Energy efficiency on a community scale has been a major hurdle given the city’s size. Achieving the City’s goal of 50% per capita energy use reduction by 2022 will require a significant investment by the community both in terms of behavior change as well as investment in energy efficient products.

Q5: How long did it take to start seeing a reduction in GHG emissions from these actions (as evidenced by lower fuel sales or other trackable criteria)?
It has taken San Jose approximately 5 years to see measurable GHG reductions from energy efficiency improvements and solar installations.

Q6: Do you attribute the emission reductions to a Climate Action Plan?
There are a number of factors that are having an impact on emissions including the State of California’s Renewable Portfolio Standard, San Jose’s Green Vision and General Plan. The General Plan was adopted in 2011, just as the Great Recession was ending. Development is just starting to restart, so it is too early to tell if the Plan has had any measurable impacts.
Q1: Name of your city or county:
County of Marin

Q2: What actions have you taken to significantly reduced GHG emissions?
Implemented Community Choice Aggregation; Initiated community energy efficiency rebate programs; Performed energy audits and retrofits at city/county facilities, schools, local businesses and special districts; Install solar panels on municipal facilities; Install energy-efficient street lights; Implemented solid waste reduction programs; and implemented a comprehensive green building ordinance to address all residential and commercial construction projects.

Q3: If you can, please rank the 3 top most effective actions and their associated emission reductions, financial costs, and time needed for implementation.
Community choice aggregation, energy efficiency retrofits, and renewable energy installations.

Q4: Were these actions politically challenging in your community? If so, how did you overcome this?
Community choice aggregation was politically challenging to implement but helpful tactics included community education and outreach, and grassroots outreach by local sustainability groups.

Q5: How long did it take to start seeing a reduction in GHG emissions from these actions (as evidenced by lower fuel sales or other trackable criteria)?
Currently in the process of completing a re-inventory of GHG emissions.

Q6: Do you attribute the emission reductions to a Climate Action Plan?
Yes. Our Countywide Plan set the framework for many of the policies we’ve implemented and that were included in our CAP. We’re in the process of completing an update of our CAP that will provide us with additional reduction measures.
Proven and Promising Climate Measures
From U.S. Communities for Possible Application in Sonoma County

Q1: Name of your city or county:
City of Boulder

Q2: What actions have you taken to significantly reduced GHG emissions?
- Residential energy efficiency
- Commercial energy efficiency
- Solar energy incentives programs
- City fleet switch to hybrids
- City energy performance contract
- City renewable energy developments

Q3: If you can, please rank the 3 top most effective actions and their associated emission reductions, financial costs, and time needed for implementation.
Please see the following link for more info:
https://bouldercolorado.gov/climate/climate

The city organization energy performance contract was by far the most effective program, reducing city energy use and emissions by over 25%. This program will pay for itself over approx. 15 years. City worked with McKinstry to develop and implement the EPC.

2) Energy Efficiency: The City generated approx $1.88M/year from a "carbon tax" which is a surcharge on electricity use by businesses and residents in the city. See: https://www-static.bouldercolorado.gov/docs/community-takes-charge-boulders-carbon-tax-1-
201305081136.pdf

This money is primarily invested in residential and energy efficiency programs—both in services and incentives. The city also leverages County and Federal funds. A total of approx $25M in rebate and incentive fund leverages over $11M in private investment. Overall, however, the actual emissions reductions from such programs are modest, probably less than 200,000 MT CO2s out of a total of over 2,000,000 in emissions. A detailed assessment of Boulder's programs see the RM Report assessing past performance: https://www-

Brendle Report for Looking Forward:

Also see Boulder's unique rental property energy efficiency program: https://bouldercolorado.gov/plan-develop/smartcra

For the most recent analysis of Climate Action options, please see the 7/30/13 Council Study Session memo: https://www-
static.bouldercolorado.gov/docs/July_30_FINAL_Study_Session_Pack-1-201307240003.pdf

Ultimately we have realized that conservation and energy efficiency will not get us more than 20-30% toward our GHG reduction goals. The remainder must come from energy source replacement. Any appropriate climate action goal (80% reduction below 1990 levels by 2050 as a minimum) is essentially a commitment to transitioning off fossil fuels. This is what led the City to explore and now pursue municipalizing our electric utility as we could not get our current utility (Xcel) to make firm commitments to the radical reductions in fossil fuel generation that are necessary. Information on this aspect of our work can be found at:
https://bouldercolorado.gov/pages/energy-future-goals-and-objectives

Q4: Were these actions politically challenging in your community? If so, how did you overcome this?
A major aspect of the City's strategy has been to form a series of "working groups" that convene both community experts and interested community members in actively exploring options together. These groups were central to the energy efficiency strategy development and now to the exploration of municipalization. We have also actively engaged very good marketing and PR firms to help create effective outreach materials and campaigns.

Q5: How long did it take to start seeing a reduction in GHG emissions from these actions (as evidenced by lower fuel sales or other trackable criteria)?
We are rebuilding our GHG inventory. Our findings, like many others, are that we're barely keeping pace with GHG growth. We are not yet seeing significant GHG reductions.

Q6: Do you attribute the emission reductions to a Climate Action Plan?
Our ability to hold our emissions steady is definitely related to our Climate Action Plan. We are now realizing, however, that this effort has to be a much more comprehensive and persuasive effort that more actively engages all departments as well as building more engagement and collaboration with other major institutions. Ultimately, however, it's all about changing the foundation of our energy source—from fossil fuels to renewable. Conservation and efficiency will never get us there.
Q1: Name of your city or county:
City of Palo Alto

Q2: What actions have you taken to significantly reduced GHG emissions?
Making electric supply to be 100% renewable

Q3: If you can, please rank the 3 top most effective actions and their associated emission reductions, financial costs, and time needed for implementation.
1. carbon neutral supplies - less than 0.2 cents/kWh - unique to Palo Alto
2. energy efficiency - 0.4 to 0.6% year 1 goals - cost effective criteria
3. Education and information to reduce energy usage (e.g. Power report and education campaigns)

Q4: Were these actions politically challenging in your community? If so, how did you overcome this?
Community is focus on sustainability, so minimal community/political challenges

Q5: How long did it take to start seeing a reduction in GHG emissions from these actions (as evidenced by lower fuel sales or other trackable criteria)?
Over a period of time for energy efficiency; as soon as more renewables were procured for supply related GHG

Q6: Do you attribute the emission reductions to a Climate Action Plan?
Yes
Q1: Name of your city or county:
City of Philadelphia

Q2: What actions have you taken to significantly reduced GHG emissions?
The 2012 municipal GHG inventory shows a 13 percent decrease in emissions since 2006. Energy conservation in City buildings and the use of clean-burning biofuel in the City fleet are two main drivers of this change. The largest emissions decrease in both the municipal and citywide inventories comes from power plants decreasing the use of coal for electricity generation.

Q3: If you can, please rank the 3 top most effective actions and their associated emission reductions, financial costs, and time needed for implementation.
- The City’s Energy Efficiency Fund was established in 2010. Since that time, the program has invested approximately $1.5 million dollars in a variety of projects at City facilities with annual savings of more than $400,000. No direct emissions reductions calculated.
- All diesel vehicles in the City fleet currently run on biodiesel. No cost or emissions calculated.
- The City purchases renewable energy certificates (RECs) covering 20% of its energy usage.

Q4: Were these actions politically challenging in your community? If so, how did you overcome this?
We got a lot of favorable public feedback during the drafting of Greenworks, our sustainability plan.

Q5: How long did it take to start seeing a reduction in GHG emissions from these actions (as evidenced by lower fuel sales or other trackable criteria)?
We saw GHG emissions reductions in both municipal and citywide inventories between 2006 and 2010. While we know these reductions are correlated with our work, we do not know that our work caused the reductions.

Q6: Do you attribute the emission reductions to a Climate Action Plan?
All of our work is outlined and tracked in our Greenworks plan, which is a comprehensive sustainability plan.
Q1: Name of your city or county:
City of San Rafael

Q2: What actions have you taken to significantly reduced GHG emissions?
Developed a Climate Action Plan
Switched to Marin Clean Energy
Adopted Green Building Regulations
Installed new HVAC and LED lights in city buildings, parking garages, and street/traffic lights
Increased diversion through curbside compost/green waste pickup for residents
Adopted C&D ordinance requiring 75% diversion
Promote and support Resilient Neighborhoods residential green living program
Many more found on our web site from our CAP

Q3: If you can, please rank the 3 top most effective actions and their associated emission reductions, financial costs, and time needed for implementation.
Green Building Ordinance
ZW programs (curbside composting and C&D ordinance)
Marin Clean Energy

Q4: Were these actions politically challenging in your community? If so, how did you overcome this?
A little pushback on Green Building from contractors, some serious campaigning against Marin Clean Energy by PG&E and some follow-up community challenges. Mostly through continuing on and making sure the positive benefits are in the forefront of the communications.

Q5: How long did it take to start seeing a reduction in GHG emissions from these actions (as evidenced by lower fuel sales or other trackable criteria)?
Pretty quickly, w/ MOE- w/in a year. Green Building is more of a formula right now and not too trackable. Probably a year or so with the ZW programs.

Q6: Do you attribute the emission reductions to a Climate Action Plan?
Yes
Q1: Name of your city or county:
City of Oberlin

Q2: What actions have you taken to significantly reduced GHG emissions?
Local municipal electric utility (ONLP) will provide approximately over 85% carbon neutral electricity portfolio by 2015 (primarily landfill gas baseload electricity). ONLP participates in Efficiency Smart program offering a prescriptive rebate program (residential & small commercial) and custom program (large commercial). City and College have led by example in implementing energy efficiency and reducing GHG emissions (building efficiency, lighting retrofits, streetlights). Oberlin College will be replacing the coal boilers in its Central Heating Plant with natural gas boilers and transitioning to geothermal energy zones. Providing Oberlin With Efficiency Responsibly (POWER) provides Energy Advocacy service for Oberlin residents to connect them with efficiency programs.

Q3: If you can, please rank the 3 top most effective actions and their associated emission reductions, financial costs, and time needed for implementation.
1. Municipal electric portfolio to >85% carbon neutral (reduces our emissions approx 50%) by 2015
2. Oberlin College Central Heating Plant to natural gas by 2015
3. Energy efficiency & Efficiency Smart Program
See Oberlin Climate Action Plan for details on emissions reductions.

Q4: Were these actions politically challenging in your community? If so, how did you overcome this?
These types of actions are always politically challenging. Some of the best ways to overcome this are to build relationships and trust with decision-makers, remind people of their prior commitments, and facilitate the conversations and work that makes these actions possible.

Q5: How long did it take to start seeing a reduction in GHG emissions from these actions (as evidenced by lower fuel sales or other trackable criteria)?
This will be determined as projects get phased in over the next 2 years and as we complete updated GHG emissions inventories.

Q6: Do you attribute the emission reductions to a Climate Action Plan?
The City of Oberlin’s first Climate Action Plan was written in 2011, and an update completed in 2013 with broad community input. The College’s Climate Action Plan was written in 2009 and is in the process of being updated. Decisions and actions were performed simultaneously, largely due to (a) commitments that both City/College had made to carbon neutrality and, later, to becoming climate positive and (b) undergoing the climate action planning process. With the CAPs just recently passed by City Council (unanimously) in 2013, it remains to be seen the extent of its impact on influencing future emissions reductions actions, which will be significantly more difficult to achieve. Early actions have primarily been part of a centralized decision-making process under the control of the City, municipal electric utility, or College. Next step actions will require multiple decentralized decision-makers to take action in the areas of home energy use and transportation.
Q1: Name of your city or county:
City of Berkeley

Q2: What actions have you taken to significantly reduced GHG emissions?
Zoning/TOD; bike network; curbside composting/recycling; mandatory requirements for energy efficiency in existing buildings; mandatory recycling for multifamily, commercial bldgs.; EE incentives/assistance for res and commercial

Q3: If you can, please rank the 3 top most effective actions and their associated emission reductions, financial costs, and time needed for implementation.
1. Mandatory energy efficiency requirements for res and commercial
2. Bike and ped infrastructure/TOD
3. Incentive programs for EE.

Q4: Were these actions politically challenging in your community? If so, how did you overcome this?
TOD is politically challenging. We use messaging and data to illustrate the benefits.

Q5: How long did it take to start seeing a reduction in GHG emissions from these actions (as evidenced by lower fuel sales or other trackable criteria)?
Hard to say. The impact of energy efficiency efforts is immediate.

Q6: Do you attribute the emission reductions to a Climate Action Plan?
CAP adopted in 2009. Since then our actions and level of community and Cty government engagement have definitely accelerated.
Q1: Name of your city or county:
City of Oakland

Q2: What actions have you taken to significantly reduced GHG emissions?
- Oakland adopted a commercial and residential green building ordinance that requires better energy efficiency than the minimum requirements of the State's energy code. These cost-effective, energy efficiency improvements for new building construction and remodeling save Oakland businesses and residents money over the life cycle of the equipment while substantially reducing related greenhouse gas emissions.
- Oakland is replacing all of its cobra head street lights (30,000 cobra heads in a total inventory of 35,000 cobra head and ornamental lights) with high efficiency LED products. These changes will reduce the energy consumption of 30,000 streetlights to about 50% of their current consumption. More details are available upon request.
- Oakland created and delivered Oakland Stines, a saturation campaign that successfully introduced new technology throughout the city. The most attractive technologies were LED replacements and occupancy-sensing controls for parking garages; occupancy-sensing HVAC controls for hospitality spaces (detecting when rooms are vacant and adjusting the temperature); and occupancy-based stairwell lighting.
- The Oakland City Council adopted a Zero Waste Goal in 2008, calling for a 90% reduction in waste sent to landfill by 2020, with an environmental hierarchy to guide how the diverted material is managed through recycling and composting. The City's Zero Waste Strategic Plan outlines strategies for meeting this goal. These strategies prioritize “solutions” to reduce and divert waste, and expand waste reduction, recycling and composting programs. By pursuing the City's adopted Zero Waste strategies, Oakland can help to create GHG reductions on the same order of magnitude as those related to transportation and building energy use. Oakland released an RFP for zero waste discard management services for the residential, commercial, industrial and government sectors in 2012. Services are scheduled to begin 7/1/2015.
- Retrofitting nearly all City buildings spaces with high efficiency lighting equipment and occupancy-based controls and improving HVAC system efficiency and operations.
- Building a megawatt of solar power on municipal facilities, and encouraging the development of other systems citywide, including adopting one of the most solar-friendly ordinances to simplify the permitting process and minimize cost of solar power permitting.
- To promote bicycling, Oakland built 30 miles of bikeways and 1,500 bike parking spaces in 2011 and 2012. Long-range efforts are guided by the City’s Bicycle Master Plan and publicized through the Bicycle Friendly Community program, a national program of the League of American Bicyclists.
- Installing real-time intelligent traffic controls near the Oracle arena and Coliseum.

Q3: If you can, please rank the 3 top most effective actions and their associated emission reductions, financial costs, and time needed for implementation.

Q4: Were these actions politically challenging in your community? If so, how did you overcome this?
Oakland has a substantial political support within the Mayor's Office, throughout the City Council and in the community for cost-effective greenhouse gas emissions actions. Evidence includes adoption of the Energy and Climate Action Plan, Green Building Ordinance, and the Zero Waste Strategic Plan. There is a wealth of political interest directed toward climate action and a multitude of opinions, which is a challenging to navigate, but no single issue or obstacle stands out.

Q5: How long did it take to start seeing a reduction in GHG emissions from these actions (as evidenced by lower fuel sales or other trackable criteria)?
In our facilities, we see the results from one year to the next. We expect to see results in the community when we update the inventory again.

Q6: Do you attribute the emission reductions to a Climate Action Plan?
The plan is relatively new, so we attribute the current efforts more directly to the political and administrative climate that has been supporting the work for many years. The recent activities are getting lots of support, including from the presence of the Energy and Climate Action Plan. Having a plan adds compelling justification to efforts that reduce GHG emissions.
Q1: Name of your city or county:

City of Minneapolis

Q2: What actions have you taken to significantly reduced GHG emissions?

We are working on an array of energy efficiency, renewable energy, transportation and waste reduction strategies. See our climate action plan: http://www.minneapolismn.gov/sustainability/climate/index.htm and our Energy Pathways Study: http://www.ci.minneapolis.mn.us/energy/franchising/WCMS1P-113782

Q3: If you can, please rank the top most effective actions and their associated emission reductions, financial costs, and time needed for implementation.

Working with our utility, through our Pathways study, is likely to result in the most reductions. This will likely take two years, and could include some significant cost ($500k). A second strategy is our building energy disclosure ordinance. While not fully implemented, we hope this ordinance will lead to increased efficiency in our commercial building sector.

Q4: Were these actions politically challenging in your community? If so, how did you overcome this?

The building energy disclosure policy was somewhat challenging, but we mitigated this by meeting early and often with the many stakeholders involved in the process from the public and private sector to get their feedback and make adjustments to the ordinance. We also had many strong supporters of the ordinance.

Q5: How long did it take to start seeing a reduction in GHG emissions from these actions (as evidenced by lower fuel sales or other trackable criteria)?

Minneapolis has seen a reduction in greenhouse gases since 2006 (see here: http://www.minneapolismn.gov/sustainability/indicators/WCMS1P-087153) but our most aggressive action strategies are just being implemented so we won’t see results right away.

Q6: Do you attribute the emission reductions to a Climate Action Plan?

We may, we will have to track emissions annually and look carefully at the actions we undertook.
Q1: Name of your city or county:
Washington DC

Q2: What actions have you taken to significantly reduced GHG emissions?
Since buildings make up 75% of the District’s total emissions, energy efficiency in large buildings and home weatherizations have been the primary target for reducing energy consumption and GHG emissions. The Green Building Act is a primary tool by which the District is making buildings more efficient - requiring all buildings above a certain size to be at a minimum LEED certified. The Clean and Affordable Energy Act is requiring providers to seek cleaner sources of energy for what is sold in the District. This is also helping to generate funds to be used for local solar projects. Energy Benchmarking is helping to encourage green building in the District. All of these actions are in line with building efficiency goals.

Q3: If you can, please rank the 3 most effective actions and their associated emission reductions, financial costs, and time needed for implementation.
The District also has a PACE program, which has just started to roll out and fund projects. The PACE program is a financing mechanism that is paid through property tax assessments attached to the property. The District’s goal is to fund up to $70m of projects over the next 5 years.
The Clean and Affordable Energy Act is using the city’s purchasing power to encourage cleaner energy produced in the regional grid. The District is also getting ready to adopt the International Green Construction Codes (slightly modified for District customize), which will surpass the GBA in terms of energy efficiency requirements for new construction and major renovations. These combined efforts will have a substantial impact on the District’s building efficiency.
The District Government is also committed to reducing energy use by 20% by 2020, which is well on its way to achieving. Public buildings are being retrofitted and new construction (i.e. schools) are being built to LEED Silver to Platinum status. The District Government is also purchasing 100% of its electricity from renewable sources and setting aside a contact with a regional provider to procure its power from a regional wind farm. By influencing the regional market, the District is facilitating cleaner energy from producers and driving down emissions.

Q4: Were these actions politically challenging in your community? If so, how did you overcome this?
Some of these actions were challenging to the District’s business community, as they thought LEED certification would raise new construction cost prohibitive and prevent new development in the city. But since the enactment of the GBA, building owners have realized that LEED certification is very much the market floor. Most new buildings can be built to LEED Silver or higher and yet more per square foot. The LEED buildings have since become the industry standard in the District and many building owners are now exploring how to go next.

Q5: How long did it take to start seeing a reduction in GHG emissions from these actions (as evidenced by lower fuel sales or other trackable criteria)?
The District’s baseline inventory in 2006 also was the year that the GBA was enacted and started to roll out. In 2011, the District re- inventoried its emissions and noted a 12% reduction between 2006 and 2011, despite having grown in population and workforce. The combined effect of energy efficiency and cleaner energy in the city grid contribute to this reduction. In 2012, further reductions were noticed and have been verified by the results of the Energy Star Benchmarking data.

Q6: Do you attribute the emission reductions to a Climate Action Plan?
We have a draft Climate Action Plan that lists and quantifies specific measures as a way to track progress toward future reduction goals. Many of these actions are quantified in this plan. DDEE will work to finalize the CAP this fall.
Q1: Name of your city or county:
Snohomish County, WA

Q2: What actions have you taken to significantly reduced GHG emissions?
- Government building retrofits for energy and resource conservation
- EnergySmart Loan Program - uses loan loss reserve and third party financing to offer low-interest weatherization and renewable energy loans for County homeowners
- New Environmentally Preferable Purchasing and Product Utilization Policy (EPP)
- New Sustainable Operations Action Plan (SOAP) which establishes energy, GHG, and resource consumption reduction goals
- Gov't fleet purchases electric and hybrid vehicles
- Many other policies and programs: please see County's 2010 Sustainability Update or more background information http://www.co.snohomish.wa.us/documents/County_Services/Climate_Energy/Sustainability_Summary_Report_2010.pdf

Q3: If you can, please rank the 3 top most effective actions and their associated emission reductions, financial costs, and time needed for implementation.
1. Our public utility district (SnoPUD) and electric provider for the County reduced the amount of coal in their fuel mix and switched to hydro - this reduced the community's GHGs.
2. EnergySmart Loan Program - we have loaned out over $2.5 million in just under two years for homeowners to make their homes more energy efficient.
3. New Sustainable Operations Action Plan (SOAP) is our sustainability plan for government operations. Unanimously adopted by Council and issued as an Executive Order, we are moving fast and quickly to meet our GHG energy, water, and waste reduction goals.

Q4: Were these actions politically challenging in your community? If so, how did you overcome this?
The above mentioned items were generally not too politically challenging.

Q5: How long did it take to start seeing a reduction in GHG emissions from these actions (as evidenced by lower fuel sales or other trackable criteria)?
For a change in the utility's fuel mix, that started right away. The other items take considerably.

Q6: Do you attribute the emission reductions to a Climate Action Plan?
Yes and no. Primary reason for decrease in GHGs is because of utility fuel mix change. GHG reductions realized in the last 3.5 years are due to the creation of programs and policies that I mentioned above.
Survey responses with supplemental information from phone interviews and email responses

November 8, 2013

Austin: Zach Baumer

Q1: What actions have you taken to significantly reduced GHG emissions?

Building Energy Efficiency codes and programs: Municipal Utility (department of the city) – under City Council – this is what made them a leader – goal of 35% annual generation from renewables by 2020. Trying to meet 800MW target between 2005 – 2020 (200 MW from solar) – Austin Energy Green Building – program “Green Building” since before LEED – with their own star rating – for new buildings – lots of commercial and on-site generation programs. Just about to get PACE – just passed legislation to allow for PACE in Texas (couple of years out to get rolled out); Looking at on-bill financing;

Austin Energy website: data library: “Energy Conservation and Audit Disclosure”: Energy Audit and discloser program- ECAD – multi, single and commercial property components to that – must disclose energy usage to tenants

Peak demand reduction programs – commercial and industrial – develop contracts with organizations – pay them per kwh to avoid energy use at certain times of year

On the residential side, they will give you a rebate on a Smart thermostat (they can turn it off)

Large purchase of Renewable energy (RECs) – Green Choice: they go to the market – instead of a fuel charge, you pay a renewable energy charge (700 Million kwh)

Onsite solar PV programs: rebate program, net metering – “the value of solar” – looking at a community program where you can buy on other people’s solar

Bicycle and pedestrian programs - have added hundreds of miles of bike lane (mostly restriping) -

Recycling, Reusing, and Composting

Plug-in electric vehicles – rebates for home charging stations – city pays 50 hrs per year for all the electricity you use (Zach Baumer phone conversation 10/1/2013)

Q2: If you can, please rank the 3 top most effective actions and their associated emission reductions, financial costs, and time needed for implementation.

Building Energy Efficiency and codes
Renewable Energy Credit purchases
Recycling, reusing and composting – council adopted a zero waste by 2040 – advanced single stream, curbside composting, rebates for compost, piloting green waste bin for composting in some neighborhoods, will soon have requirement for commercial compost

Q3: Were these actions politically challenging in your community? If so, how did you overcome this?

No, Austin has a supportive stakeholder base, we are typically under fire for not doing enough or achieving enough progress.

Q4: How long did it take to start seeing a reduction in GHG emissions from these actions (as evidenced by lower fuel sales or other trackable criteria)?
Efficiency and solar happen immediately
Bikes and Ped, maybe little or no benefit
Recycling and composting, immediate but scope 3 and out of our control

Q5: Do you attribute the emission reductions to a Climate Action Plan?

Yes, the Austin Climate Protection Plan is a resolution passed by city council in 2007, we report annually on progress and results from efforts laid out in that plan.

County of Montgomery, VA: Stan Edwards

I looked at your survey and (like the solutions to climate change!) the answers to your questions are fairly complex. Perhaps the best way to address them is to have a conversation with you to discuss our programs and progress. One thing that has definitely hampered us is a lack of funding for continued analysis of GHG emissions and the impact of individual programs on emissions, so providing specific answers to questions 1, 2, and 4 is difficult (if not impossible).

The answer to question 3 is yes, everything we do in Montgomery County seems to be politically challenging, despite the fact that our County Council is made up of nine representatives all from the same party. Perhaps it’s our proximity to Washington, DC!

As far as question 5 is concerned, I do think having the Climate Protection Plan has made a big difference in moving programs forward. We are nowhere near our GHG reduction goals, but I have been involved in many situations where the justification for pursuing something was, at least in part, because “it was recommended in the Climate Protection Plan.”

For background, it may be useful to look at several documents:

1. The 2009 Montgomery County Climate Protection Plan – This document was developed by County staff in conjunction with an appointed Sustainability Working Group, which was in existence through mid-2011.

2. The 2009 Annual Report of the Sustainability Working Group – This memo to the County Executive and County Council outlined progress made on implementing the recommended actions in the plan.


Following the dissolution of the Sustainability Working Group, we have been focused more on project implementation (particularly a $7.6 million dollar grant from DOE for energy efficiency programs) than reporting. We recognize the value of continual reporting but have just not had the staff or fiscal resources to do it.

One of the accomplishments we are most hopeful about is the launching of the MyGreenMontgomery website, which provides a lot of information to residents about programs in the County. We have seen the use of this website, along with the associated Facebook page and Twitter feed, increase over time and we hope it becomes, as the site says, the go to “guide for living a green life in Montgomery County.”

We are also proud of our green business certification program (modeled after many California programs) and the recently completed study on reducing energy use in commercial and multi-family buildings in the County. We are way behind Sonoma in implementing a PACE program, but we are working on it!
Stan Edwards  
Division of Environmental Policy & Compliance  
Department of Environmental Protection  
Montgomery County, MD  
240-777-7748

2010 update:  

They are following ICLEI – 80% by 2050. Piecemeal implementing things, no specific mandate, plan said level off by 2010 and then drop by 5% each year; data issues they are still correcting, but probably not on track.

ARRA-funded block grant for EE – 7.6M dollars for County buildings, residential rebate programs for HVAC, ceiling and insulation, EE appliances, commercial program (gave 42 rebates), study of the commercial sector and what policies could implement (interim goal of 25% by 2020 in commercial sector) – in the process of developing PACE, but they stopped residential PACE when the Freddie/Fannie debacle started, AAA bond rating, they would like to move forward commercial has been introduced  
Prohibition on Counties collecting money from private sources – so could not do PACE that way, but this prohibition may go away.

TDR’s: preserved about 1/3 of county as agricultural reserve: Jeremy Criss 301-590-2830 (Agricultural Services Program)

Concentrating on transit-oriented development for more mass transit, BRT, light rail, etc

Recycling rates is among the highest in the country, curbside collection of yard waste with composting of that, exploring foodwaste composting (pilot - with a cafeteria (to expand to restaurants?), waste-to-energy incinerator, required to provide recycling for multifamily, current rate is >50%, looking for 70% by 2020, one community is doing a curbside to residences, a nonprofit collects from restaurants

Easily quantified – residential buildings and non-res in buildings, VMT, solid waste

Collecting an energy tax – helps them to track for their inventory, VMT

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Progress report 2010:  

City of Arcata

Q2: What actions have you taken to significantly reduced GHG emissions?

1) completed several efficiency upgrades to City Facilities 2) Support our Energy JPA in on the ground programs such as free lighting assessments for businesses and energy assessments for homes followed by help with incentive applications and rebates for implementation of efficiency measures. 3. Passage of an excessive electricity tax - just implemented today. Taxes residential meter that exceed 600% above PG&E baseline

Q3: If you can, please rank the 3 top most effective actions and their associated emission reductions, financial costs, and time needed for implementation.

I would only be listing individual projects such as LED street light retrofits here - I don't think that is what you are looking for.

24
Q4: Were these actions politically challenging in your community? If so, how did you overcome this?

So far our measures have all been supported politically. There was lots of community discussion regarding the tax but in the end a lot of support.

Q5: How long did it take to start seeing a reduction in GHG emissions from these actions (as evidenced by lower fuel sales or other trackable criteria)?

Trackable criteria is something we are struggling with now. The tax will be easier than most programs to track but metrics is a hard to gauge for us for programs in the community.

Q6: Do you attribute the emission reductions to a Climate Action Plan?

I contribute our continued work to have a reduction plan. The programs that we work may not necessarily come straight from the plan but have an overall reduction goal and a plan that supports inventory updates and programs makes a big difference as council members and staff change overtime.

City of Miami

Q2: What actions have you taken to significantly reduced GHG emissions?

In 2010, after five years in the making, Miami 21 was launched. Miami 21 entails a holistic approach to land use and urban planning. It provides a clear vision for the City that is supported by specific guidelines and regulations so that future generations can reap the benefits of well-balanced neighborhoods and rich quality of life. Miami 21 is a form-based code that incorporates walkability, activation of the pedestrian realm, encourages alternative modes of transportation, and mandates green building for larger buildings. It also encourages mixed-use in the urban core. All of these factors ultimately impact GHG emissions.

Q3: If you can, please rank the 3 top most effective actions and their associated emission reductions, financial costs, and time needed for implementation.

1. Creates walkable neighborhoods by encouraging mixed-use, activated pedestrian frontages (long term) 2. Goal to enhance the City's tree canopy with a goal of a minimum of 30% tree canopy coverage, citywide, by 2020. 3. Regulations to require large scale buildings (anything over 50,000 square feet) to be minimum Silver LEED certified.

Q4: Were these actions politically challenging in your community? If so, how did you overcome this?

Yes, it took five years to build consensus, and get the plan approved. It required a great deal of communication to all stakeholders as well as political leadership.

Q5: How long did it take to start seeing a reduction in GHG emissions from these actions (as evidenced by lower fuel sales or other trackable criteria)?

There are no trackable mechanisms, however, one can clearly see the difference by more pedestrian activity, more bicycles on the streets, and increased canopy.

Q6: Do you attribute the emission reductions to a Climate Action Plan?
The City has several plans in place to ultimately achieve this goal. That includes a landscape ordinance, tree protection laws, green building regulations, a bicycle master plan, a tree master plan, and a climate action plan (MiPlan).

Q1: Name of your city or county:
City of San Luis Obispo

Q2: What actions have you taken to significantly reduced GHG emissions?
1. Adopt a Climate Action Plan. 2. Implement General Plan policies that reduce GHG emissions. 3. Use sustainable facility upgrades.

Q3: If you can, please rank the 3 top most effective actions and their associated emission reductions, financial costs, and time needed for implementation.
1. Reduce the community waste stream to as close to zero waste as possible, with a 75% diversion rate by the year 2020. Expected: -7,440 MTCO2e, High cost, 5 to 10 yrs. 2. Increase the percentage of non-recreational trips that are made by bicycle. Expected: -4,818 MTCO2e, High cost, 10+ yrs. 3. Implement local programs, and collaborate with the County and State, to improve energy efficiency in older building stock. Expected: -1,745 MTCO2e, Medium cost, 5 to 10 yrs.

Q4: Were these actions politically challenging in your community? If so, how did you overcome this?
Yes, especially efficiency improvements to existing buildings. We embarked on an extensive public outreach campaign, and changed the policies based on feedback.

Q5: How long did it take to start seeing a reduction in GHG emissions from these actions (as evidenced by lower fuel sales or other trackable criteria)?
Our CAP was just adopted August 2012 so we have yet to see statistically valid results.

Q6: Do you attribute the emission reductions to a Climate Action Plan?
Yes! However, many of the policies in the CAP were already covered in the Conservation & Open Space and Land Use Elements.

Benicia

Name of your city or county:

Q1. Benicia

Q2: What actions have you taken to significantly reduced GHG emissions?
Q3: If you can, please rank the 3 top most effective actions and their associated emission reductions, financial costs, and time needed for implementation.

- **Home Energy & Water Audits** - 26,809 lbs CO2, 51,163kWh (2009-present) - $393,000 allocated, $154,000 spent - WattzOn implements the program for the City; City reviews reports and processes invoices one per month and annually.
- **Streetlight Retrofit Project** - 2,294 out of 2,342 streetlights retrofitted (98%) from high pressure sodium to LED and Induction - 59 CO2MT reduction (induction) - 47 CO2MT reduction (LED) - Bond funded ($12m), cost of streetlight retrofits approximately $80,000; managed by Chevron Energy Solutions, contract signed October 2010, lights completed April 2012; City Staff installed fixtures; staff time spent reviewing documents, tracking energy and cost savings, and installing/maintaining fixtures.
- **10-site City Facility Solar Project** (1.67MW) - 604MTCO2 reduced (March 2012 - October 2013) - $9m estimated cost - contract signed with Chevron Energy Solutions 10/2012, solar operational March 2012; City tracks energy/GHG/cost savings and maintains systems.

Q4: Were these actions politically challenging in your community? If so, how did you overcome this?

Chevron Energy Solutions project was challenging because of the expense. Projected cost savings was used as tool to help persuade the community.

Q5: How long did it take to start seeing a reduction in GHG emissions from these actions (as evidenced by lower fuel sales or other trackable criteria)?

Solar and streetlight retrofits began reducing emissions as soon as installation was complete. CAP Coordinator was hired Feb. 2012 to track projects and full report was given to the City May 2013. Residential Energy and Water audit program generated savings in first three months; savings were verified for some participants 1 year after audit.

Q6: Do you attribute the emission reductions to a Climate Action Plan?

Yes. All three actions are tied to CAP strategies.

Phone: CAP coordinator in March 2012. Watts-on implemented

Water conservation and solar incentive programs; transportation will be a big focus going forward (2nd largest), business sustainability program – free in-depth audits for businesses, worked with PG&E to identified largest energy users. PG&E contacts them initially, then city no interest and low interest loans, PACE financing district, $50,000 minimum floor - 48% GHGs comes from commercial and industrial sector, community sustainability committee created an expo where they will be talking about transportation emissions, applied for a Davenport grant through Pepperdine, 2 level 2 stations for EVs, Working with growing energy labs; first dual station (has both types of connectors) plus battery back-up. Looking at adaptation as well. Trying to leverage mitigation for adaptation – working with Innovative Solutions at UC Berkeley to come up with adaptation – monetize for businesses (spell out their money savings for doing certain things) – looking for dual benefits, also framing it as risk prevention (insurance premiums may rise soon).

County Board of Sups entering into HERO Program (opted in), YGreene PACE financing district. Strategic Growth Council and PG&E funding all cities in Solano County to have a CAP.

Increased awareness with green bins that are now taking food and Republic will be taking food compost soon, looking at leverage business resource program for that program.
Q1: Name of your city or county:

San Jose

Q2: What actions have you taken to significantly reduced GHG emissions?

San Jose adopted its Green Vision in 2007, which lays out 15 ambitious goals to reduce energy use, achieve zero waste from landfills, planting trees all while creating 25,000 clean tech jobs (http://www.sanjoseca.gov/Index.aspx?NID=1417) The City of San Jose has also adopted a Greenhouse Gas (GHG) Reduction Strategy in conjunction with the recently adopted Envision San Jose 2040 General Plan Update. The General Plan shifts development from single story buildings, to high-density development along transit corridors (“Transit Villages”)

Q3: If you can, please rank the 3 top most effective actions and their associated emission reductions, financial costs, and time needed for implementation.

San Jose has nearly 60MW of installed solar and reduced community energy use by 12% which has resulted in 196,779 MTCO2 avoided since 2006. The solar has been installed all over the city including homes, businesses, schools and other government buildings. I can’t speak to how the homes and businesses paid for their systems, but the PV that has been installed on our municipal buildings has been through Power Purchase Agreements. Approximately 4.3MW has been installed on municipal buildings (fire stations, community centers and libraries) with the remainder being installed by homeowners and businesses.

Q4: Were these actions politically challenging in your community? If so, how did you overcome this?

Accelerating solar installations has been a priority for the current Administration. Permit streamlining and cost-recovery permit fees have helped advance this goal. Energy efficiency on a community scale has been a major hurdle given the city's size. Achieving the City's goal of 50% per capita energy use reduction by 2022 will require a significant investment by the community both in terms of behavior change as well as investment in energy efficient products.

Q5: How long did it take to start seeing a reduction in GHG emissions from these actions (as evidenced by lower fuel sales or other trackable criteria)?

It has taken San Jose approximately 5 years to see measurable GHG reductions from energy efficiency improvements and solar installations

Q6: Do you attribute the emission reductions to a Climate Action Plan?

There are a number of factors that are having an impact on emissions including the State of California's Renewable Portfolio Standard, San Jose's Green Vision and General Plan. The General Plan was adopted in 2011, just as the Great Recession was ending. Development is just starting to restart, so it is too early to tell if the Plan has had any measurable impacts.

What financing tools is the city planning to use for EE retrofits:

Private financing mostly, but mostly looking at PACE

What financing tools is the city planning to use for the move toward high-density mixed-use development along transit corridors?

New developers will need to comply with the general plan, applying for grants to bring BART to San Jose
Marin County

Q1: Name of your city or county:

County of Marin: Omar Pena, Dana Arm

Q2: What actions have you taken to significantly reduced GHG emissions?

Implemented Community Choice Aggregation; having community champion: Charles McGlashan was key, community groups stepping up – Mainstreet Moms, Sustainable San Rafael, Sustainable Novato, etc telling people at events (farmers markets, festivals) that they support CCA
Initiated community energy efficiency rebate programs; Marin Clean Energy is setting up an on-bill payment system
Performed energy audits and retrofits at city/town facilities, schools, local businesses and special districts; used ARRA funding, CEC low-interest loans, PG&E 0% interest loans, funds from a partnership with PG&E as well, clean renewable energy bonds, some cities have used PPA’s, commercial are using feed-in tarrifs
Install solar panels on municipal facilities;
Install energy-efficient street lights; on-bill financing
Implemented solid waste reduction programs; and
Implemented a comprehensive green building ordinance to address all residential and commercial construction projects: in 2010 included a 3rd party verification process and for new construction too, used Build It Green to verify them, next code cycle will be doing it as well

Q3: If you can, please rank the 3 top most effective actions and their associated emission reductions, financial costs, and time needed for implementation.

Community choice aggregation, energy efficiency retrofits, and renewable energy installations
Transportation: Transportation Authority of Marin – not much there yet
Curbside composting – most waste haulers are doing this, some commercial; new program at central marin waste mngmnt agency  biodigester project
Marin Carbon Project – sequestering carbon, have submitted results to BAAQMD for approval

Q4: Were these actions politically challenging in your community? If so, how did you overcome this?

Community choice aggregation was politically challenging to implement but helpful tactics included community education and outreach, and grassroots outreach by local sustainability groups.

Q5: How long did it take to start seeing a reduction in GHG emissions from these actions (as evidenced by lower fuel sales or other trackable criteria)?

Currently in the process of completing a re-inventory of GHG emissions.

Q6: Do you attribute the emission reductions to a Climate Action Plan?

Yes. Our Countywide Plan set the framework for many of the policies we’ve implemented and that were included in our CAP. We’re in the process of completing an update of our CAP that will provide us with additional reduction measures.
Boulder

Q1: Name of your city or county:

City of Boulder

Q2: What actions have you taken to significantly reduced GHG emissions?

Residential energy efficiency Commercial energy efficiency Solar energy incentives programs City fleet switch to hybrids City energy performance contract City renewable energy developments

Q3: If you can, please rank the 3 top most effective actions and their associated emission reductions, financial costs, and time needed for implementation.

Please see the following link for much more info: https://bouldercolorado.gov/climate/climate

The city organization energy performance contract was by far the most effective program, reducing city energy use and emissions by over 25%. This program will pay for itself over approx 15 years. City worked with McKinstry to develop and implement the EPC. 2) Energy Efficiency. The City generated approx $1.8M/year from a "carbon tax" which is a surcharge on electricity use by businesses and residents in the city. See: https://www-static.bouldercolorado.gov/docs/community-takes-charge-boulders-carbon-tax-1-201305081136.pdf

This money is primarily invested in residential and energy efficiency programs--both in services and incentives. The city also leverages County and Federal funds.

A total of approx $2M in rebate and incentive funds leverages over $11M in private investment. Overall, however, the actual emissions reductions from such programs are modest, probably less than 200,000 MT CO2e out of a total of over 2,000,000 in emissions. A detailed assessment of Boulder's programs see the RMI Report assessing past performance:


Also see Boulder's unique rental property energy efficiency program:https://bouldercolorado.gov/plan-develop/SMARTregs

For the most recent analysis of Climate Action options, please see the 7/30/13 Council Study Session memo: https://www-static.bouldercolorado.gov/docs/July_30_FINAL_Study_Session_Packet-1-201307240903.pdf

Ultimately we have realized that conservation and energy efficiency will not get us more than 20-30% towards our GHG reduction goals.

The remainder must come from energy source replacement. Any appropriate climate action goal (80% reduction below 1990 levels by 2050 as a minimum) is essentially a commitment to transitioning off fossil fuels. This is what led the City to explore and now pursue municipalizing our electric utility as we could not get our current utility-Xcel, to make firm commitments to the radical reductions in fossil fuel generation that are necessary. Information on this aspect of our work can be found at: https://bouldercolorado.gov/pages/energy-future-goals-and-objectives

Q4: Were these actions politically challenging in your community? If so, how did you overcome this?
A major aspect of the City's strategy has been to form a series of "working groups" that convene both community experts and interested community members in actively exploring options together. These groups were central to the energy efficiency strategy development and now to the exploration of municipalization. We have also actively engaged very good marketing and PR firms to help create effective outreach materials and campaigns.

Q5: How long did it take to start seeing a reduction in GHG emissions from these actions (as evidenced by lower fuel sales or other trackable criteria)?

We are rebuilding our GHG inventory. Our findings, like many others, are that we're barely keeping pace with GHG growth. We are not yet seeing significant GHG reductions.

Q6: Do you attribute the emission reductions to a Climate Action Plan?

Our ability to hold our emissions steady is definitely related to our Climate Action Plan. We are now realizing, however, that this effort has to be a much more comprehensive and pervasive effort that more actively engages all departments as well as building more engagement and collaboration with other major institutions. Ultimately, however, its all about changing the foundation of our energy source--from fossil fuels to renewables. Conservation and efficiency will never get us there.

Palo Alto:

http://www.cityofpaloalto.org/services/sustainability/default.asp

Shiva.swaminathan@cityofpaloalto.org

Q2: What actions have you taken to significantly reduced GHG emissions?

Making electric supply to be 100% renewable

Q3: If you can, please rank the 3 top most effective actions and their associated emission reductions, financial costs, and time needed for implementation.

1. carbon neutral supplies - less than 0.2 cents/kWh - unique to Palo Alto
2. energy efficiency - 0.4 to 0.6% year EE goals - cost effective criteria
3. Education and information to reduce energy usage (e.g. OPower report and education campaigns)

Q4: Were these actions politically challenging in your community? If so, how did you overcome this?

Community is focus on sustainability, so minimal community/political challenges

Q5: How long did it take to start seeing a reduction in GHG emissions from these actions (as evidenced by lower fuel sales or other trackable criteria)?

Over a period of time for energy efficiency; as soon as more renewables were procured for supply related GHG

Q6: Do you attribute the emission reductions to a Climate Action Plan?

Yes

Supplemental from the web:
In recent years the City has taken multiple steps towards reducing GHG emissions in its electric portfolio through energy efficiency efforts, encouragement of solar photovoltaic panel installations, offering PaloAltoGreen, and adoption of an accelerated Renewable Portfolio Standard (RPS). Combined, these efforts are expected to account for an over 40% drop in 2012 electricity-related GHG emissions compared to 2005 levels.


Carbon-neutral power:

Ann Arbor:

- green fleets policy 14%
- EE work in municipal buildings
- 1st PACE program implemented recently, 500k
- New climate plan: 25% below 2000 by 25, 90 by 2050
- 2 hydro facilities, but sell that to other facilities
- Trying to do more solar
- Working on a 500kw solar install that utility would do on city land - they would run directly to fleet bldgs, run excess back to grid
- Lots of wind farms in Northern Michigan - trying to buy into these down in Ann Arbor
- U of Michigan is 25% of GHGs - lots of huge buildings - $80 Million spent on energy per year
- $250 Million spent on energy city-wide
- Local dev. finance authority, various agencies could help with this
- Fairly strong local economy
- 9 million sq feet of space downtown
- Local nonprofit, The Ecology Center $30,000 raised - up to $110,000 probably coming for community climate program
- Washma County - fairly rural - 350k, city is 114
- Bought land in rural areas to prevent mcmansions and preserve farm land - preserved 300 acres of farm land
- Bus system is very nice - many biodiesel, hybrid buses,
- Rail lines go through Ann Arbor
- Trying to get rail lines up for 4-hour trip from Detroit to Chicago (110); passenger priority makes it fast
- 60k people coming into the city for jobs each day - lots of high tech, biotech

Chicago:

Glad to hear you read the plan; we are working on a 1-year progress update now. We will be ready to release within the next few weeks. To your questions:

1. Regarding TOD, we did introduce and pass an ordinance to accelerate denser, less car-dependent development near transit stations. It went into effect last month. Basically, for commercial and mixed-use properties located near transit (either 600’ or 1,200’), the ordinance eliminates minimum parking requirements and offers density bonuses, allowing for smaller dwelling units and taller buildings. Studies have shown real estate sales prices in Chicago near transit outperformed the region by 30%, demonstrating a clear demand for real estate with easy access to transit. I can say more about this if you are interested in hearing more.

2. Transit projects are typically funded by Federal and State dollars to our Chicago Transit Authority (buses and light rail) and Metra (commuter rail) and the debt markets (revenue and general obligation bonds). Infrastructure is
also funded out of the City’s capital budget and through tax increment financing. Our more innovative projects like our bikeshare program, Divvy – now the nation’s 2nd in size, traffic signal synchronization, bus rapid transit, electric truck purchase vouchers, etc. are funded at least through grants

3. The majority of our new tree plantings are funded privately, as part of development agreements. As part of our new Green Storm water Infrastructure Strategy Initiative, announced by our Mayor last week, we are carving out capital budget for green infra – including trees. In the public way, again capital budget and TIF fund these projects. Our Bureau of Forestry is primarily focused on maintenance these days rather new planting. Emerald ash borer is of particular concern on the maintenance front.

Let me know if you have further questions. In general, energy efficiency is most important for emissions reductions in Chicago. Rooftop solar is another area we have done a lot with; Solar Power International is here next week and we’ll have announcements then about some the developments here to cut permitting costs, streamline zoning and permitting approvals, and introduce additional incentives. Community Choice Aggregation has been a big recent development here, with our no coal contract, including a doubling of wind power under the previous regime. This CCA is also the biggest in U.S. history; we’ll have more renewable energy development news directly resulting from our aggregated purchasing of electricity here in Chicago.

Transportation has been the area where we have made the most news in recent months, with the explosive growth bike share and the rapid expansion of our protected bikeways network. The Streets for Cycling 2020 plan calls for a 645 mile bikeways network by 2020. With our Complete Streets policy in place, the public way is looking very different in Chicago. It’s exciting to see; a visual and physically engaging way to experience sustainability in a city.

Aaron Joseph LEED AP
Deputy Sustainability Officer
Office of the Mayor
City of Chicago
312-744-5053 | @SustainChicago

Q1: Name of your city or county:

City of Philadelphia

Q2: What actions have you taken to significantly reduced GHG emissions?

The 2012 municipal GHG inventory shows a 13 percent decrease in emissions since 2006. Energy conservation in City buildings and the use of clean-burning biofuel in the City fleet are two main drivers of this change. The largest emissions decrease in both the municipal and citywide inventories comes from power plants decreasing the use of coal for electricity generation.

Q3: If you can, please rank the 3 top most effective actions and their associated emission reductions, financial costs, and time needed for implementation.

- The City’s Energy Efficiency Fund was established in 2010. Since that time, the program has invested approximately $1.5 million dollars in a variety of projects at City facilities with annual savings of more than $400,000. No direct emissions reductions calculated. - All diesel vehicles in the City fleet currently run on biodiesel. No cost or emissions calculated. - The City purchases renewable energy certificates (RECs) covering 20% of its energy usage.

Q4: Were these actions politically challenging in your community? If so, how did you overcome this?

We got a lot of favorable public feedback during the drafting of Greenworks, our sustainability plan.
Q5: How long did it take to start seeing a reduction in GHG emissions from these actions (as evidenced by lower fuel sales or other trackable criteria)?

We saw GHG emissions reductions in both municipal and citywide inventories between 2006 and 2010. While we know these reductions are correlated with our work, we do not know that our work caused the reductions.

Q6: Do you attribute the emission reductions to a Climate Action Plan?

All of our work is outlined and tracked in our Greenworks plan, which is a comprehensive sustainability plan.

City of San Rafael

Q2: What actions have you taken to significantly reduced GHG emissions?

Developed a Climate Action Plan Switched to Marin Clean Energy Adopted Green Building Regulations Installed new HVAC and LED lights in city buildings, parking garages, and street/traffic lights, increased diversion through curbside compost/greenwaste pickup for residents Adopted C&D ordinance requiring 75% diversion Promote and support Resilient Neighborhoods residential green living program. Many more found on our web site from our CAP

Q3: If you can, please rank the 3 top most effective actions and their associated emission reductions, financial costs, and time needed for implementation.

Green Building Ordinance ZW programs (curbside composting and C&D ordinance) Marin Clean Energy

Q4: Were these actions politically challenging in your community? If so, how did you overcome this?

A little pushback on Green Building from contractors, some serious campaigning against Marin Clean Energy by PG&E and some follow up community challenges. Mostly through continuing on and making sure the positive benefits are in the forefront of the communications.

Q5: How long did it take to start seeing a reduction in GHG emissions from these actions (as evidenced by lower fuel sales or other trackable criteria)?

Pretty quickly with MCE - within a year. Green Building is more of a formula right now and not too trackable. Probably a year or so with the ZW programs.

Q6: Do you attribute the emission reductions to a Climate Action Plan?

Yes

Name of your city or county:

City of Oberlin
Kristin Braziunas (440)775-8121

Q2: What actions have you taken to significantly reduced GHG emissions?
Local municipal electric utility (OMLPS) will provide approximately over 85% carbon neutral electricity portfolio by 2015 (primarily landfill gas baseload electricity); OMLPS participates in Efficiency Smart program offering a prescriptive rebate program (residential & small commercial) and custom program (large commercial); City and College have led by example in implementing energy efficiency and reducing GHG emissions (building efficiency, lighting retrofits, streetlights); Oberlin College will be replacing the coal boilers in its Central Heating Plant with natural gas boilers and transitioning to geothermal energy zones; Providing Oberlin With Efficiency Responsibly (POWER) provides Energy Advocacy service for Oberlin residents to connect them with efficiency programs.

Q3: If you can, please rank the 3 top most effective actions and their associated emission reductions, financial costs, and time needed for implementation.


Q4: Were these actions politically challenging in your community? If so, how did you overcome this?

These types of actions are always politically challenging. Some of the best ways to overcome this are to build relationships and trust with decision-makers, remind people of their prior commitments, and facilitate the conversations and workload that makes these actions possible.

Q5: How long did it take to start seeing a reduction in GHG emissions from these actions (as evidenced by lower fuel sales or other trackable criteria)?

This will be determined as projects get phased in over the next 2 years and as we complete updated GHG emissions inventories.

Phone call: working on a new GHG inventory with a third party, going thru CAP and assigning numbers – can follow up in a few months

City of Los Angeles phone call 10/18/13

Haydee Urita-Lopez < haydee.urita-lopez@lacity.org>
Valentina Knox
Erin Strelich <erin.strelich@lacity.org>, EIR
David Somers David.Somers@lacity.org - policy division – bike plan

Climate action plan – adopted 2007 – crafted by the dept. of environmental affairs (now gone), almost all for municipal operations – LADWP – increased % renewables – went for 35% by 2020 – not sure how close they are now. Two additional people you could contact:

Gretchen Hardison
Director of Climate and Air Quality Programs
(213) 978-0852
gretchen.hardison@lacity.org

Craig Tranby
Climate Plan Manager (not there anymore)
(213) 978-0853
craig.tranby@lacity.org
City council just passed an ordinance to eliminate coal by 2025

Did achieve 20% by 2010

Water! Increasing total of recycled water – new LID ordinance: storm water recapture and infiltration
Wayne King – bureau of sanitation – vehicle emissions

David: Transportation and land use: updating mobility plan – 20/35; complete streets stuff, some performance metrics in there, reducing VMT, more transit, transit corridors, bike priority, trying to build housing around transit system, SB743 changes how they do transportation metrics – shifting to a metric that relates to VMT per capita – vehicle VMT fees? Infill will start to be more fast-tracked and not hindered/scrutinized (by CEQA) for adding more local traffic, etc.
Sanitation fleet has been upgraded

David wants to get away from focus on use and look more at impact and performance (form)

Metro operates BRT – doing signal prioritization, not a lot of dedicated bus lanes
Southern Cal Association of Governments: looking more at EVs

Erin: Sanitation: solid waste integrated resource plan – 70% solid waste diversion by 2013, 90% diversion by 2025, zero waste city goal, curbside recycling has expanded – one-bin recycling, added residential food waste to green can, expanded recycling to multi-family and commercial buildings are required to sign up for a recycling program,
biosolids from waste water: reused 240,000 tons of biosolids, 70% is going to resurface application to farm in Kern County – providing specific crops for LA Zoo;
TIRE demonstration Project – at Willmington – they sequestered biosolids into the old tapped out oil wells – sequesters the CO2, hope to generate methane gas from this eventually.

Sanitation has established tax breaks for companies, bonus for companies that produce green energy

Elizabeth call: Rainy & Associates firm hired to help with the initiative: General Plan Framework element, climate change (mitigation and adaptation) is definitely in their plan: health atlas – looks at over 100 indicators and health outcomes in the city – looks at air quality, transportation, access to health services, crime, etc, etc, then identified the areas most impacted by some of the adverse health issues

Dept of City Planning updating the mobility element – Mie Lar
Also a technical advisory committee and sanitation – Deborah Deeds

Q1: Name of your city or county:
City of Oakland

Q2: What actions have you taken to significantly reduced GHG emissions?

• Oakland adopted a commercial and residential green building ordinance that requires better energy efficiency than the minimum requirements of the State’s energy code. These cost-effective, energy efficiency improvements for new building construction and remodeling save Oakland businesses and residents money over the life cycle of the equipment while substantially reducing related greenhouse gas emissions.
• Oakland is replacing all of its cobra head street lights (30,000 cobra heads in a total inventory of 35,000 cobra head and ornamental lights) with high efficiency LED products. These changes will reduce the energy consumption of 30,000 streetlights to about 50% of their current consumption. More details are available upon request.
• Oakland created and delivered Oakland Shines, a saturation campaign that successfully introduced new technology
throughout the city. The most attractive technologies were LED replacements and occupancy-sensing controls for parking garages; occupancy-sensing HVAC controls for hospitality spaces (detecting when rooms are vacant and adjusting the temperature); and occupancy-based stairwell lights.

- Retrofitting nearly all City buildings spaces with high efficiency lighting equipment and occupancy-based controls and improving HVAC system efficiency and operations.
- The Oakland City Council adopted a Zero Waste Goal in 2006, calling for a 90% reduction in waste sent to landfill by 2020, with an environmental hierarchy to guide how the diverted material is managed through recycling and composting. The City’s Zero Waste Strategic Plan outlines strategies for meeting this goal. These strategies prioritize “systems” solutions to reduce landfilled waste, and expand waste reduction, recycling and composting programs. By pursuing the City’s adopted Zero Waste strategies, Oakland can help to create GHG reductions on the same order of magnitude as those related to transportation and building energy use. Oakland released an RFP for zero waste discards management services for the residential, commercial, industrial and government sectors in 2012. Services are scheduled to begin 7/1/2015.

- Building a megawatt of solar power on municipal facilities, and encouraging the development of other systems citywide, including adopting one of the most solar-friendly ordinances to simplify the permitting process and minimize cost of solar power permitting.

- To promote bicycling, Oakland built 30 miles of bikeways and 1,500 bike parking spaces in 2011 and 2012. Long-range efforts are guided by the City’s Bicycle Master Plan and publicized through the Bicycle Friendly Community program, a national program of the League of American Bicyclists.
- Installing real-time intelligent traffic controls near the Oracle arena and O.co Coliseum.

Q3: If you can, please rank the 3 top most effective actions and their associated emission reductions, financial costs, and time needed for implementation.

- Q4: Were these actions politically challenging in your community? If so, how did you overcome this?

Oakland has substantial political support within the Mayor’s Office, throughout the City Council and in the community for cost-effective greenhouse gas emissions actions. Evidence includes adoption of the Energy and Climate Action Plan, Green Building Ordinance, and the Zero Waste Strategic Plan. There is a wealth of political interest directed toward climate action and a multitude of opinions, which is a challenging to navigate, but no single issue or obstacle stands out.

Q5: How long did it take to start seeing a reduction in GHG emissions from these actions (as evidenced by lower fuel sales or other trackable criteria)?

In our facilities, we see the results from one year to the next. We expect to see results in the community when we update the inventory again.

Q6: Do you attribute the emission reductions to a Climate Action Plan?

The plan is relatively new, so we attribute the current efforts more directly to the political and administrative climate that has been supporting the climate work for many years. The recent activities are getting lots of support, including from the presence of the Energy and Climate Action Plan. Having a plan adds compelling justification to efforts that reduce GHG emissions.
Q1: Name of your city or county:

City of Minneapolis

Q2: What actions have you taken to significantly reduced GHG emissions?

We are working on an array of energy efficiency, renewable energy, transportation and waste reduction strategies. See our climate action plan: http://www.minneapolismn.gov/sustainability/climate/index.htm and our Energy Pathways Study: http://www.ci.minneapolis.mn.us/energyfranchise/WCMS1P-113782

Q3: If you can, please rank the 3 top most effective actions and their associated emission reductions, financial costs, and time needed for implementation.

Working with our utility, through our Pathways study, is likely to result in the most reductions. This will likely take two years, and could include some significant cost ($500k). A second strategy is our building energy disclosure ordinance. While not fully implemented, we hope this ordinance will lead to increased efficiency in our commercial building sector.

Q4: Were these actions politically challenging in your community? If so, how did you overcome this?

The building energy disclosure policy was somewhat challenging, but we mitigated this by meeting early and often with the many stakeholders involved in the process from the public and private sector to get their feedback and make adjustments to the ordinance. We also had many strong supporters of the ordinance.

Q5: How long did it take to start seeing a reduction in GHG emissions from these actions (as evidenced by lower fuel sales or other trackable criteria)?

Minneapolis has seen a reduction in greenhouse gases since 2006 (see here: http://www.minneapolismn.gov/sustainability/indicators/WCMS1P-087163) but our most aggressive action strategies are just being implemented so we won't see results right away.

Q6: Do you attribute the emission reductions to a Climate Action Plan?

We may, we will have to track emissions annually and look carefully at the actions we undertook.

Chula Vista: Brandon Reed phone call 10/22

Free program is unique. They have tied it to the business licensing and every 3-5 years they provide evaluations for storefronts and offices (audits). They discovered that this seems to yield high levels of implementing no cost measures in the business community. They also have a mandatory green building code.

Brandon will send Pat Stoner EE study.

In transportation, they are mainly focused on promoting alternative fuels (for example, they have a CNG station that is publicly available). They have also installed 25 charging stations at municipal facilities. They are also trying to focus on more walkable communities and addressing the built environment at the regional level.
Q1: Name of your city or county:

Washington DC

Q2: What actions have you taken to significantly reduced GHG emissions?

Since buildings make up 75% of the District's total emissions, energy efficiency in large buildings and home weatherizations have been the primary target for reducing energy consumption and GHG emissions. The Green Building Act is a primary tool by which the District is making big buildings more efficient - requiring all buildings above a certain size to be at a minimum LEED certified. The Clean and Affordable Energy Act is requiring providers to seek cleaner sources of energy for what is sold in the District. This is also helping to generate funds to be used for local solar projects. Energy Benchmarking is helping to encourage green building in the District.

Q3: If you can, please rank the 3 top most effective actions and their associated emission reductions, financial costs, and time needed for implementation.

The Green Building Act: Enacted and initiated in 2006, fully implemented in 2011. The Act generates a revenue and contributes to a majority of the District's gains in building efficiency. The District also has a PACE program, which has just started to roll out and fund projects. The PACE program is a financing mechanism that is repaid through property tax assessments attached to the property. The District's goal is to fund up to $70m of projects over the next 5 years. The Clean and Affordable Energy Act is using the city's purchasing power to encourage cleaner energy produced in the regional grid. The District is also getting ready to adopt the International Green Construction Codes (slightly modified for District customization), which will surpass the GBA in terms of energy efficiency requirements for new construction and major renovations. These combined effects will have a substantial impact on the District's building efficiency. The District Government is also committed to reducing energy use by 20% by 2020, which it is well on its way to achieving. Public buildings are being retrofitted and new construction (i.e. schools) are being built to LEED Silver to Platinum status. The District Government is also purchasing 100% of its electricity from renewable sources and settling into a contract with a regional provider to procure its power from a regional wind farm. By influencing the regional market, the District is facilitating cleaner energy from producers and driving down emissions.

Q4: Were these actions politically challenging in your community? If so, how did you overcome this?

Some of these actions were challenging with the District's business community, as they thought LEED certification would make new construction cost prohibitive and prevent new development in the city. But since the enactment of the GBA, building owners have realized that LEED certification is very much the market floor. Most new buildings can be built to LEED Silver or higher and get more per square foot on their rents. LEED buildings have since become the industry standard in the District and many building owners are now exploring where to go next.

Q5: How long did it take to start seeing a reduction in GHG emissions from these actions (as evidenced by lower fuel sales or other trackable criteria)?

The District's baseline inventory in 2006 also was the year that the GBA was enacted and started to roll out. In 2011, the District re-inventoried its emissions and noted a 12% reduction between 2006 and 2011, despite having grown in population and workforce. The combined effect of energy efficiency and cleaner energy in the city grid contribute to this reduction. In 2012, further reductions were noticed and have been verified by the results of the Energy Star Benchmarking data.

Q6: Do you attribute the emission reductions to a Climate Action Plan?

We have a draft Climate Action Plan that lists and quantifies specific measures as a way to track progress toward future reduction goals. Many of these actions are quantified in this plan. DDOE will work to finalize the CAP this fall.
Q1: Name of your city or county:

Snohomish County, WA

Q2: What actions have you taken to significantly reduced GHG emissions?

- Government building retrofits for energy and resource conservation
- EnergySmart Loan Program - uses loan loss reserve and third party financing to offer low-interest weatherization and renewable energy loans for County homeowners
- New Environmentally Preferable Purchasing and Product Utilization Policy (EPP)
- New Sustainable Operations Action Plan (SOAP) which establishes energy, GHG, and resource consumption reduction goals
- Gov't fleet purchases electric and hybrid vehicles
- Many other policies and programs: please see County's 2010 Sustainability Update for more background information

http://www.co.snohomish.wa.us/documents/County_Services/Climate_Energy/SustainReport030811.pdf

Q3: If you can, please rank the 3 top most effective actions and their associated emission reductions, financial costs, and time needed for implementation.

1. Our public utility district (SnoPUD) and electric provider for the County reduced the amount of coal in their fuel mix and switched to hydro - this reduced the community's GHGs.
2. EnergySmart Loan Program - we have loaned out over $2.5 million in just under two years for homeowners to make their homes more energy efficient.
3. New Sustainable Operations Action Plan (SOAP) is our sustainability plan for government operations. Unanimously adopted by Council and issued as an Executive Order, we are moving forward quickly to meet our GHG, energy, water, and waste reduction goals.

Q4: Were these actions politically challenging in your community? If so, how did you overcome this?

The above mentioned items were generally not too politically challenging.

Q5: How long did it take to start seeing a reduction in GHG emissions from these actions (as evidenced by lower fuel sales or other trackable criteria)?

For a change in the utility's fuel mix, that started right away. The other items it varies considerably.

Q6: Do you attribute the emission reductions to a Climate Action Plan?

Yes and no. Primary reason for decrease in GHGs is because of utility fuel mix change. GHG reductions realized in the last 3.5 years are due to the creation of programs and policies that I mentioned above.
Staff Report

To: RCPA Board of Directors
From: Lauren Casey, Deputy Director, Climate Programs
Item: 4.2.1 – RCPA Activities Report
Date: October 13, 2014

Issue:
Information Only

Background:

CLIMATE ACTION PLANNING

Climate Action 2020
RCPA staff continues to work with the Staff Working Group (SWG), Stakeholder Advisory Group (SAG), and other stakeholders to identify and evaluate greenhouse gas (GHG) reduction strategies to help Sonoma County achieve its adopted GHG target and to evaluate new GHG reduction target options. Several SWG and SAG meetings will be held in October including several sector specific Ad Hoc working groups that will delve into the details of measure analysis and measure definitions. Input from these meetings will be brought back to the Board in November.

Staff is also working with the North Bay Climate Adaptation Initiative to finalize a draft vulnerability assessment that will be presented to the Staff Working Group, Stakeholder Advisory Group, and Board later this fall.

Climate Action Champions – U.S. Department of Energy Initiative for Community Leadership

On October 1, the U.S. Department of Energy (DOE) released a Request for Applications (FOA-0001189) for the Climate Action Champions Initiative. Through this initiative the DOE will collaborate with other federal agencies to identify and showcase U.S. local and tribal governments that have proven to be climate leaders through commitment to both reduce greenhouse gas emissions (GHGs) and to prepare for the impacts of climate change. No funding will be awarded through the RFA, however communities selected as Champions will receive technical assistance from Federal Agencies and peer network opportunities to bolster their current and planned actions around carbon pollution mitigation and climate resilience.

Staff attended a webinar on October 9th to learn more about the initiative and is developing an application to be submitted by the RCPA pending Board Direction.

Climate Adaptation Forums

As reported in September, the RCPA presented a panel on coordinating a response to climate change across jurisdictions and agencies at the first California Adaptation Forum held in August in Sacramento. The Local Government Commission approached Sonoma County via Board Member Jake Mackenzie to determine our interest in piloting a local Adaptation Forum in the North Bay or Sonoma County.
Subsequently, a coalition of interested parties including the RCPA, SCWA, Sonoma County Energy and Sustainability, the North Bay Climate Adaptation Initiative, the Leadership Institute for Ecology and the Economy, and others have been convening to conduct initial scoping conversations around a local Adaptation Forum. RCPA staff is interested in serving as a primary host of the event in order to broaden the extent of engagement in Climate Action Planning in Sonoma County.

Similarly, the next National Adaptation Forum will be held on May 12-14 in St. Louis, Missouri. Staff is working on a proposal to bring a similar Sonoma County panel as presented at the State Forum to the National Forum next spring. More information about the Forum can be found here: http://www.nationaladaptationforum.org/.

ENERGY EFFICIENCY

Bay Area Regional Energy Network (BayREN)

The RCPA continues to administer and implement Bay Area Regional Energy Network (BayREN) programs on behalf of the jurisdictions of Sonoma County across single family Energy Upgrade California, Multifamily Energy Upgrade California, Pay As You Save (PAYS®) on bill repayment, and Codes and Standards. Staff continues to coordinate with the Sonoma County Energy Independence Program (SCEIP) and Sonoma Clean Power (SCP) regarding program updates, outreach to building owners and contractors, event planning, and other issues related to energy efficiency.

The following sections summarize key program activities across BayREN programs.

Single Family Energy Upgrade California

The RCPA continues to work with the regional leads to conduct marketing, education, and outreach related to Energy Upgrade California™ Home Upgrade, a program through which homeowners can install a set of measures to improve the performance of their home as a system.

Regionally, BayREN has seen good success, with over 1,000 retrofit projects complete or underway and over $1.3 million in incentives going to homeowners. Locally, Sonoma County continues to see solid participation numbers, with $260,000 paid or reserved since September, 2013 to support residential retrofits.

In addition, BayREN has worked to recruit contractors to participate in Energy Upgrade California programs. Over 160 contractors have been trained in the region on how to harness incentives for home performance projects.

Lastly, BayREN is providing a free Home Upgrade Advisor (HUA) service that connects homeowners interested in energy efficiency with building performance analysts who can talk them through all of the incentives and other resources available in their area and connect them with contractors. The HUA service also serves as an extended sales team for contractors who can refer homeowners to a neutral third party to verify the program resources – including those specific to Sonoma County such as the Energy Independence Program - and project scopes contractors propose to their customers. Over 30% of the accounts created with the HUA service have moved forward with an EUC project.

Multifamily Energy Upgrade California

The BayREN multi-family program – Bay Area Multifamily Building Enhancements (BAMBE) – has been very successful, with properties in the pipeline amounting to almost five times the number of units that could be served by the original incentive allocation. Due to this success BayREN was able to increase the budget for incentives by $4.7 million in 2014. Between reserved and completed projects, BayREN has achieved over 2,000,000 kWh and 222,000 therms in energy savings.
In total, ten projects in Sonoma County have received technical assistance to date, accounting for 356 units, or 2% of the regional total. Sonoma County has 3% of the region’s multifamily housing units.

**Codes and Standards**

BayREN is offering a series of free trainings to help building departments and other building industry professionals navigate changes to the California Energy Code (Title 24, Part 6) which went live on July 1. The RCPA is working with local partners including the Redwood Empire Association of Code Officers (REACO) to bring some of these trainings to Sonoma County. A training on code enforcement for small cities was brought to the October REACO meeting in Petaluma on October 7th. More information about BayREN and other free codes trainings can be found at: https://www.bayren.org/codes.

**Pay As You Save (PAYS)**

BayREN continues to support the development and implementation of PAYS programs with Windsor (commercial expansion), Hayward (multifamily focused), and EBMUD (test projects in multiple sectors).

**CLEAN TRANSPORTATION**

**Shift Sonoma County**

See item 4.5 for an update on Shift Sonoma County planning activities.

**CLIMATE POLICY**

**United Nations Climate Summit – 2014**

On September 23, the United Nations held a Climate Summit intended to build political momentum towards a meaningful universal climate agreement at the next Framework Convention on Climate Change Conference of Parties (COP-21) in Paris in 2015. At the Summit world leaders reaffirmed the need to take urgent action to limit global temperature rise to 2 degrees Celsius and acknowledging that the world is not on a pathway to reach that goal committed to significantly expedite climate action. The Summit – which drew hundreds of thousands of citizens to Climate Marches in New York and other cities around the world – appears to have generated convergence on a long-term vision, including heightened commitments by local and regional governments through initiatives like the C40 Cities Compact of Mayors. The next Conference of Parties in Peru in December 2014 will reveal much more about potential outcomes in Paris in 2015. More info on the Summit can be found here: http://www.un.org/climatechange/summit/2014/09/2014-climate-change-summary-chairs-summary/

**Policy Impacts:**

None.

**Fiscal Impacts:**

None.

**Staff Recommendation:**

That RCPA staff submit an application to the DOE Climate Action Champions Initiative to celebrate local leadership in mitigating and responding to climate change.
Glossary of Acronyms

AB32 = Assembly Bill 32, Global Warming Solutions Act (2006)
ABAG = Association of Bay Area Governments
AR5 = Fifth Assessment Report (IPCC)
ARB = Air Resources Board
BayREN = Bay Area Regional Energy Network
BAMBE = Bay Area Multifamily Building Enhancements
C&S = Codes and Standards (BayREN)
CCBA = Climate Corps Bay Area
CPUC = California Public Utilities Commission
EBMUD = East Bay Municipal Utility District
EPA = Environmental Protection Agency
GHG = greenhouse gas
GIS = Geographic Information Systems
HUA = Home Upgrade Advisor (BayREN)
IPCC = Intergovernmental Panel on Climate Change
ME&O = marketing, education, and outreach
MFCAP = Multi Family Capital Advance Program
NBCAI = North Bay Climate Adaptation Initiative
NCDC = National Climate Data Center
NOAA = National Oceanic and Atmospheric Administration
NCBE = North Coast Builders Exchange
PACE = Property Assessed Clean Energy
PAYS® = Pay As You Save
PG&E = Pacific Gas and Electric
PROP = Permit Resource Opportunity Program (BayREN)
RCPA = Regional Climate Protection Authority
REACO = Redwood Empire Association of Code Officers
SCS = Sustainable Communities Strategy
SCEIP = Sonoma County Energy Independence Program
SCTA = Sonoma County Transportation Authority
SFLLR = Single Family Loan Loss Reserve
SFPUC = San Francisco Public Utilities Commission
Staff Report

To: Sonoma County Transportation Authority

From: Chris Barney, Senior Transportation Planner

Item: 2015 CTP Performance Measures, Current Conditions and Performance Target Recommendations

Date: 10/13/2014

Issue:

SCTA has directed staff to assess project performance as part of the 2015 CTP. Performance Measures have been identified that indicate progress in achieving Comprehensive Transportation Plan goals. This staff report summarizes current conditions for these performance measures and recommends performance targets for each performance measure.

Performance Measures:

The following five goals have been identified for the 2015 CTP:

- Maintain the System
- Relieve Traffic Congestion
- Reduce GHG Emissions
- Plan for Safety and Health
- Promote Economic Vitality – NEW FOR 2015 CTP

Performance measures that can be used to evaluate progress in achieving CTP goals are summarized in the table below. Some of the performance measures will be extracted from the Sonoma County Travel Model and others will be developed using post-processing tools and methods.

<table>
<thead>
<tr>
<th>CTP GOAL</th>
<th>Performance Measure</th>
<th>Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maintain the System</td>
<td>PCI, Transit System Condition</td>
<td>Credit assigned for Maintenance Projects</td>
</tr>
<tr>
<td>Relieve Traffic Congestion</td>
<td>Person Hours of Delay</td>
<td>SCTM</td>
</tr>
<tr>
<td>Reduce GHG Emissions</td>
<td>Greenhouse Gas Emissions</td>
<td>SCTM, EMFAC</td>
</tr>
<tr>
<td>Plan for Safety and Health</td>
<td>a. Share of trips made by walking, bicycling, and transit</td>
<td>SCTM</td>
</tr>
<tr>
<td></td>
<td>b. Accident Rates</td>
<td>SCTM, SMARTGAP</td>
</tr>
<tr>
<td>Promote Economic Vitality</td>
<td>a. Average Peak Period Motorized Travel Time (per trip)</td>
<td>SCTM</td>
</tr>
<tr>
<td></td>
<td>b. Economic Equity - Does the project serve a Community of Concern?</td>
<td>Communities of Concern Map</td>
</tr>
</tbody>
</table>

*Figure 1. 2015 CTP Goals and Associated Performance Measures.*
Performance Current Conditions:
Countywide baseline conditions (2010 + more recent data where available) and proposed performance targets for each 2015 CTP performance measure are summarized below.

GOAL: MAINTAIN THE SYSTEM - Performance Measure 1a: Pavement Condition Index

Transportation funding shortages and aging transportation infrastructure are contributing to the continued degradation of the countywide road network. Many jurisdictions are forced to defer needed preventative maintenance or rehabilitation projects due to budget shortfalls and increasing competition for transportation and general fund dollars.

Local jurisdictions provide road condition field survey data on to the Metropolitan Transportation System for inclusion in the Regional Pavement Management Program. Roadways are assigned a 1-100 Pavement Condition Score and MTC compiles jurisdiction, county, and regional weighted pavement condition scores. It is most efficient to maintain roads at higher PCIs, with the optimum PCI being 80. Current countywide and local PCIs are below the optimal PCI level. Countywide PCI has dropped slightly since 2005 from 53 to 52, with slight improvements observed at the countywide and jurisdiction level in 2010. Current trends indicate that SCTA will be unable to meet its target of improving countywide PCI to 80 by 2035.

CURRENT 2009 CTP TARGET for 2035: Improve countywide PCI to 80 by 2035, with a minimum road PCI of 70 by 2035. Recommend extending 2035 target to 2040.

Figure 4. Sonoma County Daily Pavement Condition Index (PCI) – 2005, 2010, and 2012 Estimates and 2035 Reduction Target (Source – MTC Regional Pavement Management Program)
GOAL: MAINTAIN THE SYSTEM - Performance Measure 1b: Transit System Average Fleet Age

Sonoma County’s transit network is an important part of the countywide transportation system. Transit provides an important travel option for county travelers and serves as a transportation lifeline for many people in the county.

Local transit agencies provide estimates on the average age of bus fleets to the National Transit Database. The Federal Transit Administration estimates that the average useful life of transit buses varies between 4-12 years depending on vehicle size and type. Adequate funding is needed to ensure that older transit vehicles can be replaced when necessary and to guarantee that bus service is not negatively impacted by equipment failure and breakdowns.

Transit System Average Fleet Age is a new performance measure in the 2015 CTP and a target for this metric needs to be set for the plan horizon year of 2040.

RECOMMENDED TARGET FOR 2040: Reduce the average bus fleet age by 25% below 2010-2012 average fleet age by 2040.

![Average Age of Transit Fleet: 2010-2012 3-year AVG](image)

Figure 5. Average Age of Bus Fleets for Sonoma County Transit Providers (Source – National Transit Database).
GOAL: RELIEVE TRAFFIC CONGESTION - Performance Measure 2: Person hours of delay (PHD).

Congestion has been consistently identified as an important public concern in Sonoma County. Traffic congestion has significant impacts on the county’s economic performance and quality of life. Travel demand routinely exceeds highway capacity during peak periods in many areas of the county. Traffic flow is also often impacted by accidents, vehicle breakdowns, road work, adverse weather conditions, and local operational issues. Person Hours of Delay (PHD) is a common aggregate measure of congestion. PHD represents the average number of hours that travelers are stuck in traffic due to recurring (due to demand) and non-recurring (due to incidents, construction, etc) congestion.

Daily PHD has remained relatively static since the adoption of the 2009 CTP. PHD dropped slightly in 2010 to 52,938 from the 2005 estimate of 53,226. 2012 estimated PHD has risen slightly since 2010 to 55,535. Recent congestion measurements suggest that congestion is staying relatively constant in Sonoma County but that future housing and employment growth will have significant impacts on countywide delay by 2040. No observable progress has been made towards reducing countywide congestion levels since the last CTP.

CURRENT 2009 CTP TARGET for 2035: Reduce Person Hours of Delay by 20% below 2005 levels by 2035. Recommend extending 2035 target to 2040.

Figure 3. Sonoma County Daily Person Hours of Delay (Congestion) – 2005, 2010, and 2012 Estimates and 2035 Reduction Target (Sources – Caltrans/SCTA).
GOAL: REDUCE GHG EMISSIONS – Performance Measure 3: Transportation Sector GHG Emissions

In Sonoma County the transportation section contributes roughly 52% of all county greenhouse gas emissions. New estimates for past, current, and future greenhouse gas emissions have been developed for the countywide climate action plan, Climate Action 2020 (CA 2020). New GHG estimates from CA 2020 are lower than GHG estimates previously developed by SCTA and the Sonoma County Climate Protection Campaign. CA 2020 estimates where developed using EMFAC 2011, which considers vehicle speeds in GHG emissions calculations. EMFAC 2011 also includes more detailed vehicle fleet information. Transportation related GHG emissions in Sonoma County have increased since 1990 and CA 2020 estimates show that it will be difficult to meet 2015 and 2035 GHG reduction targets if current trends continue.

The 2009 CTP indicates that significant future GHG reductions will be realized due to changes in vehicle fuel economy as required by state and national CAFÉ standard improvements. Staff expects that improved vehicle fuel economy will have a significant impact on future transportation GHG emissions. GHG reductions from improved vehicle fuel economy have not been reflected in the figure below.

CURRENT 2009 CTP TARGET for 2035: Reduce GHG emissions to 25% below 1990 levels by 2015, and 40% below 1990 levels by 2035. Recommend extending 2035 target to 2040 and adopting any new targets set in Climate Action 2020.

Figure 1. Sonoma County Estimated GHG Emissions - 1990, 2000, 2010, and 2012 estimates and 2015 and 2035 GHG Reduction Targets (Source – Climate Action 2020/SCTA).
GOAL: PLAN FOR SAFETY AND HEALTH - Performance Measure 4a: Share of Trips made by walking, biking, and taking transit

Shifting travel to active transportation modes such as walking, biking, or riding transit can help decrease obesity, improve neighborhood air quality conditions, and improve overall community health. Active transportation mode share or the percentage of trips being made by bike, transit, or foot will be used to estimate how CTP 2015 projects, project groupings, or transportation programs can improve or degrade health conditions in Sonoma County.

Daily mode shares can be extracted from the Sonoma County Travel Model. In 2010 8.38% of all trips (including commute, school, recreation, shopping, and other trips purposes) were made using active transportation modes. Bay Area average non-automobile mode share for all trip purposes is 16% with countywide averages ranging from 45% in San Francisco, through just over 8% in Sonoma County. North Bay county active transportation mode shares range from 14.6% in Marin County to just over 8% in Sonoma County.

Mode share for active transportation modes is expected to decrease slightly by 2040 if current trends continue.

Active transportation mode share is a new performance measure in the 2015 CTP and a target for this metric needs to be set for the plan horizon year of 2040.

RECOMMENDED TARGET FOR 2040: Reduce Drive Alone Mode share to 33.3% by 2040. Increase Active Transportation (Walk, Bike, Transit) mode share to 15% by 2040.

Figure 6. 2010 Sonoma County Mode Shares for ALL TRIP Purposes (Source – Sonoma County Travel Model)
### Table 1. Regional Mode Shares for ALL TRIP Purposes (Source – Bay Area Travel Survey)

<table>
<thead>
<tr>
<th>County</th>
<th>Non-auto Mode Share</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alameda</td>
<td>22.00%</td>
</tr>
<tr>
<td>Contra Costa</td>
<td>12.20%</td>
</tr>
<tr>
<td>Marin</td>
<td>14.60%</td>
</tr>
<tr>
<td>Napa</td>
<td>11.70%</td>
</tr>
<tr>
<td>San Francisco</td>
<td>45.00%</td>
</tr>
<tr>
<td>San Mateo</td>
<td>14.70%</td>
</tr>
<tr>
<td>Santa Clara</td>
<td>11.10%</td>
</tr>
<tr>
<td>Solano</td>
<td>10.60%</td>
</tr>
<tr>
<td><strong>Sonoma</strong></td>
<td>8.36%</td>
</tr>
<tr>
<td><strong>BAY AREA REGION</strong></td>
<td>16.00%</td>
</tr>
<tr>
<td><strong>SACRAMENTO REGION</strong></td>
<td>7.40%</td>
</tr>
</tbody>
</table>

### GOAL: PLAN FOR SAFETY AND HEALTH - Performance Measure 4b: Traffic Accident Rates

Traffic accidents impose a significant social and financial impact on county residents, and SCTA identified safety as a priority for the 2015 CTP. Traffic accident rates can be used to assess how a CTP 2015 project, project grouping, or program impacts countywide traffic safety.

Current and past traffic accident rates are available from the Statewide Integrated Traffic Records System (SWITRS). Future daily countywide accident rates will be estimated using the SMARTGAP transportation and land use post-processing tool developed with funding from the Transportation Research Board. SMARTGAP uses daily VMT to estimate accidents using historic county level accident rates.

Daily traffic accident rate is a new performance measure in the 2015 CTP and a target for this metric needs to be set for the plan horizon year of 2040.

**RECOMMENDED TARGET FOR 2040:** Reduce total daily accident rates by 1 accident per day below 2010 levels by 2040.

![Daily Accidents](image-url)

**Figure 7. Sonoma County Collisions - Daily (Source – California Statewide Integrated Traffic Records System/SWITRS).**
GOAL PROMOTE ECONOMIC VITALITY - Performance Measure 5a: Average Peak Period Travel Time per Trip

SCTA has recognized that transportation is an important component of countywide economic health and has made promoting economic vitality a goal for the 2015 CTP. Increased travel times and congestion can have a negative impact on job creation, tourism, commerce, and goods movement, while an efficient and effective transportation system can help improve local economic conditions and make working and doing business in Sonoma County more profitable.

Average PM peak period travel time can be used to estimate how well Sonoma County’s transportation system is working and how easy it is to do business, move goods, get to work, or travel in the county. This metric can be extracted from the Sonoma County Travel Model.

Average Peak Period Travel Time per Trip is a new performance measure in the 2015 CTP and a target for this metric needs to be set for the plan horizon year of 2040.

RECOMMENDED TARGET FOR 2040: Reduce 2010 Average Peak Period Travel Time per Trip by 1 minute by 2040.

2010 Estimated Average PM Peak Period Travel Time per Trip:

11.31 Minutes

GOAL PROMOTE ECONOMIC VITALITY - Performance Measure 5b: Communities of Concern

SCTA recognizes that certain vulnerable communities should be recognized when making decisions about transportation improvements in Sonoma County. These vulnerable communities have been identified by highlighting census block groups in which 30% or more of households have incomes between 0 – 200% of the federal poverty level ($21,600 - $74,020 total household income depending on family size). Projects located in or serving a Community of Concern will be identified as part of the 2015 CTP Performance Assessment.

Other metrics

The following additional metrics will be reported as part of the performance assessment for informational purposes:

- **VMT**: VMT, vehicle miles traveled or miles traveled by a vehicle, is a standard measure of transportation activity. VMT can be used to measure automobile trip frequency, trip length, and vehicle occupancy rates. VMT per person, or the average miles traveled per person per day, has leveled off since 2005. Since 2005, VMT per capita dropped from just over 23 VMT per person/day to 21.8 VMT per person/day in 2012. During this period total VMT has risen slightly but is outpaced by population growth, leading to a reduction of daily per capita VMT.

- **Percentage of household income spent on transportation**: Transportation can be a significant household expense. The Center for Housing Policy has reported that Bay Area families with annual incomes of under $70,000 spend an average of 22% of their household incomes on
transportation. Staff will use the methods developed by the Center for Neighborhood Technology to estimate project and project group impacts on transportation affordability.

- **Land Use:** SCTA and Sonoma County jurisdictions have prioritized growth in Priority Development Areas, Rural Community Investment Areas, or Economic Investment Areas as part of the regional Sustainable Communities Strategy. Projects located within or serving these areas will be identified in the 2015 CTP Performance Assessment.

**Policy Impacts:**
CTP projects and project groupings will analyzed using these performance measures, and impacts will be compared to current conditions and “Business as Usual” future conditions for each category. Some performance measures have existing targets that were set for the 2009 CTP. New performance measures including: Transit Average Fleet Age, Active Transportation Mode Share, Daily Accident Rates, and Average Peak Hour Travel Time per Trip have been added for the 2015 CTP. Staff has recommended a draft performance target for each of the new performance measures.

**Fiscal Impacts:**
None at this time.

**Staff Recommendation:**
Staff recommends extending performance targets that were set for 2035 in the 2009 CTP to 2040. Staff has provided draft performance targets for performance measures that have been added to the 2015 CTP. Consider approving 2015 CTP performance measures and associated performance targets.
Staff Report

To: SCTA/RCPA Board of Directors

From: Dana Turrey, Transportation Planner

Item: 4.5 – Shift update and MTC car sharing grant proposal

Date: October 13, 2014

**Issue:**
Shall the Board authorize staff to submit a grant proposal for the Metropolitan Transportation Commission (MTC) Car Sharing Program?

**Grant Status:**
SCTA/RCPA has funding to conduct a countywide car share feasibility study through the *Shift Sonoma County* grant and has prepared a grant proposal for car share implementation funding through the MTC Car Sharing Program. The final draft of the grant proposal will be sent via email and made available as a hand out at the October 13, 2014, SCTA/RCPA Board of Directors meeting.

**Shift Sonoma County Grant**
The Strategic Growth Council submitted a grant agreement package to staff the week of September 29th and staff is working with our counsel to review and negotiate a final agreement, under the authority granted to the Executive Director through RCPA Resolution No. 2014-001 adopted in March 2014. As soon as this agreement is executed, staff will begin work with local partners and a consultant to develop a countywide car-sharing feasibility study that would inform the implementation activities being proposed to MTC.

**MTC Car Sharing Program Grant**
SCTA has prepared a proposal in response to MTC’s call for applications for implementation of car sharing programs. This grant would provide a valuable opportunity to expand transportation options, encourage transit use, reduce dependency on vehicle ownership, and reduce greenhouse gas (GHG) emissions in Santa Rosa. A car sharing system in Santa Rosa is an important component of countywide efforts to curb vehicle emissions and instill a culture shift of personal vehicle dependency. The establishment of a car sharing system in Santa Rosa would provide a replicable model for other Sonoma County communities to follow.

The car sharing program is a $2M Congestion Mitigation and Air Quality (CMAQ) grant approved by MTC in April 2014 that aligns with the car sharing goals identified in Plan Bay Area and the Climate Initiatives Program. Approximately four to five projects will be selected to receive one-time grant funding to help with initial implementation costs. The car share feasibility study portion of the Shift Sonoma County grant may be used to meet the local match of at least 11.47 percent of the total project budget. The MTC Car Sharing Grant proposal is due on October 17, 2014.
Responses to Request for Qualification:
Staff released a Request for Qualifications (RFQ) to seek consultants’ qualifications for car share planning and implementation services on Friday, August 29, 2014. Three Statements of Qualifications (SOQs) were received in response to the car sharing feasibility component of the RFQ. Staff is in the process of reviewing the SOQs and may request detailed cost estimates from qualified consulting teams that responded to the RFQ, or may release a subsequent Request for Proposals (RFP). Contracts with the selected firm or firms will be brought to the Board for approval if planning services are desired from the responding firms.

Policy Impacts:
Car sharing reduces the need for vehicle ownership and reliance on single-occupancy vehicle commuting, thereby reducing vehicle miles traveled and GHG emissions. Implementation of a car sharing program in Santa Rosa would support the 2009 Comprehensive Transportation Plan Policy 3A to reduce vehicle miles traveled (VMT) per capita by 10% below 2005 levels by 2035 and the RCPA goals to reduce GHG emission levels.

Fiscal Impacts:
If an MTC Car Sharing Program grant is awarded, the SCTA would receive funding to partner with a car sharing company and local partners to implement a car sharing program. Staff time would be required to facilitate car share implementation.

Staff Recommendation:
Staff recommends that the Board authorize staff to submit the Car Sharing Grant Program proposal to MTC.
Staff Report

To: SCTA/RCPA Board of Directors
From: Janet Spilman, Deputy Director, Planning and Public Outreach
       Chris Barney, Senior Transportation Planner
       Lauren Casey, Deputy Director, Climate Programs

Item: 4.6 – Disadvantaged Communities; update on State and regional approaches to communities of concern

Date: October 13, 2014

Issue:

How is equity addressed in transportation, housing and climate policy at the State and regional levels and what is that impact on communities of concern in Sonoma County? How are communities of concern or disadvantaged communities defined and what are the impacts of the differences in definition?

Background:

MTC has produced a number of reports over the years addressing the issue of equity in transportation in the Bay Area. As the discussion continues, the definition has evolved and its use as a threshold or benchmark in various funding programs has increased. The State is now preparing to allocate Cap and Trade funds to projects throughout the State, a significant portion of which will be prioritized for disadvantaged communities. The California Air Resources Board (CARB) is charged with producing guidelines for the program, and has developed a tool called CalEnviroScreen to identify disadvantaged communities. Using this tool, the Bay Area is barely represented and Bay Area agencies have prepared comments expressing concern. This Board item is intended to describe history of the issue and the impacts in Sonoma County.

SonomaWORKS and other assistance based planning

The SCTA 2001 Countywide Transportation Plan addressed the transportation issues of people receiving financial assistance. As of December 12, 1999, approximately 27,400 low-income persons were receiving assistance in Sonoma County. This number included people receiving assistance through Medi-Cal, food stamps, General Assistance, foster care and Temporary Assistance for Needy Families (TANF). Of this number, 5,505 persons were in the SonomaWORKS programs. SCTA staff participated in a nine-month locally-oriented inter-agency planning process to study the transportation barriers faced by SonomaWORKS participants and develop strategies for addressing these barriers. Individuals and consequently communities were being identified by their eligibility for assistance. This dovetailed well with program needs to serve their communities. Funds could be targeted at communities with a certain percentage of identified assistance recipients.

Transit Needs and Environmental Justice
As the Sonoma WORKS program targeted certain areas for specific transportation services, other fund programs also sought to identify the needs of underserved communities, by identifying the communities themselves.

Two reports completed as part of the 2001 Regional Transportation Plan (RTP) for the Metropolitan Transportation Commission (MTC) contributed to this effort. First, the Lifeline Transportation Network Report led to MTC’s Community Based Transportation Planning Program. Transit needs were identified in economically disadvantaged communities throughout the nine-county San Francisco Bay Area and recommended community-based transportation planning as a first step to address those needs. The report furthermore identified a Lifeline Transportation Network of transit routes and where there were gaps in that network. The report sought to answer: a) Where low-income communities exist; b) What destinations are crucial for low-income people; c) How well public transportation was meeting those needs; and d) How deficiencies could be addressed. The report also recognized that transit could not be the only answer; rather a multi-modal approach was recommended. Other strategies mentioned in the report included vanpools, guaranteed ride-home programs, auto loan programs, community shuttles, dial-a-ride systems, expanded use of taxi vouchers, modified use of paratransit, and bicycle and pedestrian facilities, including enhanced access to transit.

The second report, the Environmental Justice Report, likewise identified the need for local planning in low-income and minority communities. Transportation was acknowledged to be a critical component of economic well being. The report called for community members and service providers to work cooperatively to determine how services could be improved to meet needs.

**Communities of Concern for the Community Based Transportation Plans**

MTC changed their approach and made the decision to identify the communities (geographically) first, and then, by process of robust engagement done by SCTA, determine the local transportation needs. By means of the “Equity Analysis Transportation 2030” report, MTC subsequently defined areas they called “Communities of Concern,” to determine priorities for transportation planning. MTC examined where there were concentrations of minority and low income populations. Low income communities were defined as those where thirty percent or more of the households earn below 200% of the federal poverty level. Income thresholds vary according to how many people are in a household. This is the definition SCTA staff continues to use today.

The SCTA uses a definition of Communities of Concern that measures income at the census block group level. This includes many more neighborhoods, and areas of focused poverty. Other programs use census tracts which are larger areas. A census block is the smallest breakdown but at this level many of the relevant data points like income, travel patterns, etc. are lost due to privacy concerns.

Four “Communities of Concern” were identified in Sonoma County based on low-income status (none for minority status based on the 70% criteria). These were labeled: 1) Roseland 2) Lower Russian River 3) Southwest Healdsburg, and 4) Sonoma Valley Springs Area. The Roseland Community Based Transportation Plan was completed first, in 2007. The rest followed in succession. The Springs Community Based Transportation Plan was approved in 2010.

Public outreach was integral to the CBTP process. Each plan had a prioritized list of projects that included a variety of project types. For example, the Roseland CBTP listed specific transit service, shuttle service, multi-use paths, education and public awareness programs as community transportation needs.

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1 The Federal Poverty Level was doubled in this case to account for the high cost of living in the San Francisco Bay Area. For example, in 2008 the federal poverty level was an income of $21,200 for a family of four. At 200%, this would be $42,400 for a family of four.
One Bay Area Grant (OBAG)

MTC adjusted their Communities of Concern definition again for the One Bay Area Grant, and based it on a list of demographic variables including ethnic make-up, income, English proficiency, concentration of zero-vehicle households, concentration of seniors, concentration of persons with disabilities, concentration of single-parent family households and number of overburdened renters. These factors were recommended to be used region-wide. For Sonoma County, MTC’s revised definition identified communities of concern only in Santa Rosa.

SCTA sought permission to continue to use the low income threshold for the following reasons: 1) the criteria determined by SCTA is at the finer grain of Census Block Group and can “find” the pockets of poverty with better accuracy than any study that relies on Census Tracts such as those done at the broader regional level; 2) the criteria does not necessarily address the disadvantaged communities in Sonoma County as well as they do in the more dense urban areas of the region; and 3) to honor the work done in the existing Communities of Concern.

MTC accepted SCTA’s definition of Communities of Concern for the OBAG funding cycle. Since The Priority Development Area Investment and Growth Strategy is connected to OBAG this issue is highlighted in SCTA’s report to MTC/ABAG.

Determining Disadvantaged Communities for Cap and Trade

Senate Bill 535 (De Leon) requires that the investment of Cap and Trade proceeds improve California’s most vulnerable communities. Cap and Trade proceeds are administered by the California Air Resources Board to further the goals of AB 32 (Global Warming Solutions Act) through the Greenhouse Gas Reduction Fund (GGRF, apportioned by the State legislature). At least 25% of programs funded through the GGRF must provide benefit to disadvantaged communities, and at least 10% must be located within disadvantaged communities. SB 575 also stipulates that the Environmental Protection Agency develop a list of disadvantaged communities that qualify for investment using CalEnviroScreen as a tool.

The Air Resources Board adopted Interim Guidance to Agencies Administering GGRF monies at the September 18, 2014, Board meeting. These guidelines confirmed that CalEnviroScreen will be used to determine disadvantaged communities. CalEnviroScreen utilizes a combination of population characteristics and burden of pollution (exposure) to determine disadvantaged communities at a census tract level. Currently no census tracts in Sonoma County qualify under the 25% threshold, and very few census tracts in the greater Bay Area qualify under either the 10% or 25% thresholds. This means that Sonoma County will not be eligible for GGRF program funds direct to the benefit of disadvantaged communities. CalEnviroScreen results can be viewed here: http://oehha.ca.gov/ej/ces2.html.

Method 6

The Bay Area Air Quality Management District has proposed Method 6, an alternative that uses the CalEnviroScreen tool with thresholds that include a greater population of the Bay Area. This method also drops exposure to agricultural pesticides, and incorporates “rent burden” that highlights the cost of living as new measures.

Depending on the agreed upon thresholds, this method would include some areas of south Santa Rosa and east Petaluma.

Portrait of Sonoma County

---

A Portrait of Sonoma County is an interesting tool to view the population of the County. It measures life expectancy, school enrollment, education degree attainment, and median personal earnings into a single Human Development Index. Maps from the Portrait of Sonoma County can inform decisions about transportation and climate protection, especially in evaluating vulnerable communities. However, Portrait does not set thresholds or call out census tracts that in the same manner other communities of concern approaches have. [http://www.measureofamerica.org/sonoma/](http://www.measureofamerica.org/sonoma/)

**Vulnerable Communities**

Regardless of regional or State agency decisions related to identifying disadvantaged communities, RCPA staff are interested in understanding which communities and populations within Sonoma County are locally most vulnerable to the impacts of climate change. Vulnerability of a given population is a factor of the exposure of a population to climate change impacts coupled with a population’s capacity to adapt to those impacts. Those with existing social and physical stresses including poverty, unemployment, illness, and isolation are less well equipped to respond to extreme events and slow moving catastrophes (such as rising food and energy prices).

To understand vulnerabilities, RCPA staff and the North Bay Climate Adaptation Initiative are looking to use population characteristics such as those measured by CARB, MTC, BAAQMD, and the SCTA, but in combination with other health and education indicators that reveal existing social stresses. The Portrait of Sonoma County project is a helpful tool for evaluating these multiple factors that impact adaptation capacity.

RCPA is also working though the Climate Ready North Bay project to get a better understanding of risks related to various inland climate impacts such as extreme heat, fire, flood, and drought. A discussion of these analyses will be presented to the Board later this fall in the Draft Vulnerability Analysis being developed through Climate Action 2020, with a goal of identifying the biggest opportunity areas to enhance community resilience to climate change.

**Major Concerns**

1) **Spatial geography.** Census tracts, used at the regional or state level for MTC and CARBs calculations are based on total population and are geographically small in densely populated areas and large in less dense areas, including a good portion of Sonoma County. Because a census tract represents such a large geographic area in areas of lower population density, disadvantaged communities may not be identified when using census tract level data when more affluent areas are located in the same census tract. For example the Springs area in Sonoma Valley is identified as a disadvantaged community at the census block or block group level, but at the tract level, higher income households surrounding the Springs dilute the data and effectively hide the disadvantaged community when using Census Tract level data.

2) **Measureable variables.** Variables measured by MTC (i.e. ethnic make-up, English proficiency, concentration of zero-vehicle households, concentration of seniors, concentration of persons with disabilities, concentration of single-parent family households and number of overburdened renters) include demographics that may not be especially relevant in Sonoma County, and may not actually identify locally disadvantaged communities.

3) **Commitment.** The SCTA conducted four Community Based Transportation Plans, as mentioned above, and engaged with the residents of those communities of concern. The products of that effort calls for improvements within the communities and with changing definitions there is risk that our commitment to those communities will be stifled when it comes to implementation.

**Policy Impacts:**
SCTA has an existing definition for Communities of Concern that is implemented in policy and was accepted by MTC in the last round of OBAG funding. RCPA is developing a definition of Vulnerable Communities. Staff will continue to advocate for a finer grain of study (at the census block group level) and make the Human Development Index a key reference point.

**Fiscal Impacts:**

Many funding programs prioritize communities of concern/disadvantaged communities/vulnerable populations. The definition of those communities will affect their ability to qualify for those funds.

**Staff Recommendation:**

This report is for information only but staff is seeking any input or guidance from the Board on how to best engage in ensuring projects and programs in Sonoma County’s disadvantaged communities are competitive at the State and regional levels.
**Issue:**
What is the proposed Final Budget for the SCTA for FY14/15?

**Background:**
By October of each year, the SCTA must adopt three Final Budgets in order for operations to continue. The three budgets cover the SCTA general operations, Measure M and the Transportation Fund for Clean Air (TFCA).

This staff report covers the FY14/15 SCTA Final Budget. As is customary, the budget includes all revenues from local, regional, state and federal sources. A breakdown of the costs to each jurisdiction is provided. Prior year information is included with FY13/14 actual expenditures.

**REVENUE IN THE SCTA FY14/15 FINAL BUDGET:**

- **Interest on Pooled Cash**
  
  Interest budgeted for FY14/15 is $1,000.

- **State – STIP/PPM FY14/15; TDA 3**
  
  The State Transportation Improvement Program (STIP/PPM) funds pay for staffing, office space/supplies, and consultant costs associated with the planning, programming and project management. For FY14/15 SCTA anticipates using $223,000 in PPM funds. This revenue comes to the SCTA on a reimbursement basis. This amount is down from last fiscal year due to the amount available in the STIP for these purposes.

  The SCTA is also receiving State funds from the Transportation Development Act, Article 3 account for bike and pedestrian count equipment in the amount of $30,000.

- **City and County Contributions**
  
  The City and County contributions to the SCTA are based on a population and centerline road mile formula. Population numbers were updated based on Department of Finance figures for 2013 and revised road mile numbers derived from jurisdictions’ Pavement Management System. The total contribution from local jurisdictions as shown in the Final Budget is $341,250 which is a 5% increase over last fiscal year.

- **MTC Contribution**
  
  The SCTA is eligible to receive federal Surface Transportation Program (STP) funds through MTC based on a contractual arrangement that includes a specific scope of work related to regional activities plus an additional scope of work with tasks related to transportation and land use planning including the maintenance of the travel demand model and smart growth planning activities. For FY14/15, MTC will
provide $867,000. The SCTA remains eligible for the funds as long as it maintains a planning and programming function.

- **Transportation Fund for Clean Air (TFCA) Funds**

The SCTA is eligible to receive 5% of the TFCA funds to serve as the Program Manager for the TFCA program of projects based on the hours spent managing the program. The SCTA anticipates receiving $30,000 to administer the program for FY14/15. This item is reflected as a negative expenditure due to the budgeting systems' handling of payment transfers within an agency.

- **Measure M**

The SCTA bills directly to projects for SCTA time and materials used specifically on Highway 101 projects. The FY14/15 budget reflects $200,000 for time and materials. These items are reflected as negative expenditures due to the budgeting systems' handling of payment transfers within an agency.

- **RCPA**

The RCPA staff is paid for through the SCTA's budget system and then staff time is reimbursed to SCTA from RCPA. The SCTA budget includes $472,000 in funds from the RCPA to cover staff costs, including a portion of the Executive Director's time.

**EXPENDITURES IN THE SCTA FY14/15 FINAL BUDGET:**

- **Staff Salaries/Benefits**

The FY14/15 budget reflects the salaries and benefits for ten full time positions. No COLA is assumed in the FY14/15 budget. Health and retirement benefits are provided through the County of Sonoma and paid for by the SCTA. The salary and benefits included in the budget address adjustments to the salary schedule (for merit increases) and anticipated increases in the cost of benefits.

- **Outside Contracts/Services**

Items considered outside contracts or services include the annual audit services; financial management, claims processing, budget preparation and general accounting; contracts for public outreach, project/program management, and related activities; and legal counsel for contract reviews and procedural/operational questions.

- **Operational Expenses**

Items considered operational expenses include computer hardware and software, office supplies, office lease, printing, postage, travel, and other relates categories.

**Policy Impacts:**

No new policy issues are proposed in the FY14/15 SCTA Final Budget.

**Fiscal Impacts:**

The FY14/15 SCTA Final Budget is decreased from last fiscal year primarily due to the Real Time Rideshare grant coming to an end.

**Staff Recommendation:**

In order to continue operation, the SCTA must adopt a Final Budget for FY14/15 by October 31, 2014. The SCTA should consider the proposed Final SCTA Budget and if it meets with the Board’s approval, adopt the FY14/15 SCTA Final Budget.

Adoption of Resolution No. 2014-021 adopting the FY14/15 Final Budget requires a 2/3-majority vote. Therefore, the budget MUST receive eight (8) affirmative votes to pass.
RESOLUTION OF THE BOARD OF DIRECTORS OF THE
SONOMA COUNTY TRANSPORTATION AUTHORITY, COUNTY
OF SONOMA, STATE OF CALIFORNIA, ADOPTING A FINAL
BUDGET FOR FISCAL YEAR 2014/2015.

WHEREAS, a Final Budget for Fiscal Year 2014/2015 has been prepared by the Executive
Director, reviewed by the Sonoma County Transportation Authority and attached as Exhibit A; and

WHEREAS, the Final Budget for Fiscal Year 2014/2015 includes a contribution for local
jurisdictions based on a population/road-mile formula, attached hereto as Exhibit B.

NOW, THEREFORE, BE IT RESOLVED that the Fiscal Year 2014/2015 Final Budget for the
Sonoma County Transportation Authority, attached hereto and marked Exhibit A, is hereby
adopted.

BE IT FURTHER RESOLVED that the Cities and County of Sonoma will contribute revenue as
described in Exhibit B payable by the 15th day of November of the Fiscal Year 2014/2015 to
the Sonoma County Transportation Authority.

BE IT FURTHER RESOLVED that the Executive Director, acting as Clerk of the Authority,
shall deliver a certified copy of this resolution to the Sonoma County Auditor-Controller.

THE FOREGOING RESOLUTION was moved by Director ____, seconded by Director ____,
and approved by the following vote:

<table>
<thead>
<tr>
<th>Director Allen</th>
<th>Director Carlstrom</th>
<th>Director Chambers</th>
<th>Director Gallian</th>
<th>Director Gurney</th>
<th>Director Harris</th>
<th>Director Landman</th>
<th>Director Mackenzie</th>
<th>Director McGuire</th>
<th>Director Rabbitt</th>
<th>Director Russell</th>
<th>Director Zane</th>
</tr>
</thead>
<tbody>
<tr>
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</tbody>
</table>

Ayes: Noes: Absent: Abstain:

SO ORDERED

I, the undersigned, certify that the foregoing resolution was duly adopted at a regular meeting
of the Board of Directors of the Sonoma County Transportation Authority held on October 13,
2014.

Suzanne Smith, Executive Director
Clerk, Sonoma County Transportation Authority
<table>
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<tr>
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<td>885,000</td>
<td>223,000</td>
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<td>Federal - MTC Contribution</td>
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<td>867,000</td>
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<td>HOV Lane Violation Fines</td>
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<td>REVENUES</td>
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<td></td>
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<td></td>
<td>2,396,679</td>
<td>2,251,800</td>
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<td>Salaries and Benefits</td>
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<td>1,521,795</td>
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<td>457,181</td>
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<td>2,396,679</td>
<td>2,251,800</td>
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<td></td>
<td></td>
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<td>220,991</td>
<td>53,759</td>
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## FY2014-15 Local Contribution to SCTA

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<tr>
<th>Jurisdiction</th>
<th>50% Road Miles&lt;sup&gt;1&lt;/sup&gt;</th>
<th>50% Population&lt;sup&gt;2&lt;/sup&gt;</th>
<th>Local Contribution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cloverdale</td>
<td>1.56%</td>
<td>$</td>
<td>5,318.89</td>
</tr>
<tr>
<td>Cotati</td>
<td>1.21%</td>
<td>$</td>
<td>4,123.97</td>
</tr>
<tr>
<td>Healdsburg</td>
<td>2.09%</td>
<td>$</td>
<td>7,115.28</td>
</tr>
<tr>
<td>Petaluma</td>
<td>9.60%</td>
<td>$</td>
<td>32,745.23</td>
</tr>
<tr>
<td>Rohnert Park</td>
<td>6.06%</td>
<td>$</td>
<td>20,696.18</td>
</tr>
<tr>
<td>Santa Rosa</td>
<td>27.69%</td>
<td>$</td>
<td>94,475.91</td>
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<tr>
<td>Sebastopol</td>
<td>1.26%</td>
<td>$</td>
<td>4,300.27</td>
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<tr>
<td>Sonoma</td>
<td>1.79%</td>
<td>$</td>
<td>6,097.36</td>
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<tr>
<td>Windsor</td>
<td>4.54%</td>
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<tr>
<td><strong>Total</strong></td>
<td>100%</td>
<td>$</td>
<td>341,250.00</td>
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<sup>1</sup> Road Mileage (Center Line Miles) as of September 15, 2013.

<sup>2</sup> California Department of Finance - January 1, 2013
## APPENDIX A

(2014/15 Salary Schedule - REVISED 10-14)

### Salary Schedule - PROPOSED*

**Effective 7/01/2014**

<table>
<thead>
<tr>
<th>Biweekly Salary Schedule</th>
<th>Step A</th>
<th>Step C</th>
<th>Step E</th>
<th>Step G</th>
<th>Step I</th>
<th>Step K</th>
<th>Step M</th>
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<tr>
<td><strong>SCTA Administrative Assistant I JC #1383</strong></td>
<td></td>
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</tr>
<tr>
<td>Office Manager/Meeting Coordinator &amp; Transcriber/Receptionist</td>
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<tr>
<td>Biweekly</td>
<td>1,381.40</td>
<td>1,450.47</td>
<td>1,522.99</td>
<td>1,599.14</td>
<td>1,679.10</td>
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<tr>
<td>Monthly</td>
<td>3,003.27</td>
<td>3,153.43</td>
<td>3,311.11</td>
<td>3,476.66</td>
<td>3,650.49</td>
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<td>Annual</td>
<td>36,039.24</td>
<td>37,841.21</td>
<td>39,733.27</td>
<td>41,719.93</td>
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<td><strong>SCTA Administrative Assistant II JC #1384 (1)</strong></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Hourly</td>
<td>21.49</td>
<td>22.56</td>
<td>23.69</td>
<td>24.87</td>
<td>26.12</td>
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<td>1,895.10</td>
<td>1,989.86</td>
<td>2,089.35</td>
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<tr>
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<td>3,923.92</td>
<td>4,120.12</td>
<td>4,326.12</td>
<td>4,542.43</td>
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<td>54,509.14</td>
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<td><strong>SCTA Executive Assistant JC #1218</strong></td>
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<tr>
<td>Hourly</td>
<td>21.49</td>
<td>22.12</td>
<td>23.23</td>
<td>24.39</td>
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<tr>
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<td>1,951.30</td>
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<td>Monthly</td>
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<td>3,847.35</td>
<td>4,040.18</td>
<td>4,242.28</td>
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<tr>
<td>Annual</td>
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<td>48,482.19</td>
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<tr>
<td>Hourly</td>
<td>31.83</td>
<td>33.42</td>
<td>35.10</td>
<td>36.85</td>
<td>38.69</td>
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<tr>
<td>Biweekly</td>
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<td>2,807.60</td>
<td>2,947.98</td>
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<td>5,813.30</td>
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### SCTA Deputy - Programming & ProjectsJC #1380 (1)

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### SCTA Executive Director JC #1378 (1)

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Issue:
Shall the Board adopt a final budget for RCPA for the fiscal year beginning July 1, 2014?

Background:
By October of each year, the RCPA must approve a Final Budget in order for operations to continue. This staff report covers the FY14/15 RCPA Final Budget (Exhibit A). As is customary, the budget includes all revenues from local, regional, state and federal sources. A breakdown of the costs to each jurisdiction as approved in May is provided in Exhibit B. Additionally, all anticipated expenditures are listed. Prior year information is included with FY14/15 actual revenues and expenditures.

REVENUE AND REIMBURSEMENTS IN THE RCPA FY14/15 FINAL BUDGET INCLUDE:

- Interest on Pooled Cash / Interest Charges
  Interest budgeted for FY14/15 is $900.

- Federal Contributions
  No federal contributions are anticipated for FY14.

- City and County Contributions
  The City and County contributions to the RCPA are based on a quasi-population based formula. Population numbers were updated based on Department of Finance figures for 2013. The total contribution from local jurisdictions and our regional partners (the Sonoma County Water Agency and the Open Space District) as shown in the Final Budget and outlined in Exhibit B is $175,500. This represents just under a 6% increase from FY13/14.

- Other Government Contributions
  These funds are primarily related to the Bay Area Regional Energy Network (BayREN). The RCPA was allocated $1,015,000 to implement energy efficiency programs in 2013 and 2014 via an agreement with the Association of Bay Area Governments. Of this, $285,000 will be spent in FY14/15. BayREN will also be funded through 2015 via a Proposed Decision released by the California Public Utilities Commission in September. It is anticipated that BayREN members will receive approximately half of the FY13/14 allocation, pending the Final Decision from the CPUC, anticipated in November. This will amount to roughly $500,000 for the RCPA to implement programs, $250,000 of which will be spent in FY14/15.

Total RCPA BayREN funding in FY14/15 is $535,000.
State Grants – Strategic Growth Council & State Coastal Conservancy

The Strategic Growth Council (SGC) funds are related to Climate Action 2020 and Shift Sonoma County. Of the total $1,000,000 grant amount awarded to Sonoma County jurisdictions and partners for Climate Action 2020, $145,000 will fund the RCPA over a several year period to manage the overall project, and $30,000 is for SCTA. Of the RCPA project budget, $62,000 will be spent in FY 14/15.

The Shift Sonoma County project, a new effort in FY14/15, was funded at $868,463 for a two year period. The RCPA will manage the effort in partnership with the SCTA and consultants. Total Shift costs anticipated in FY14/15 are $422,000.

The Coastal Conservancy grant for $100,000 is funding the Climate Ready North Bay project, a vulnerability analysis and pilot adaptation response project. Of this, $70,000 will be expended in FY14/15.

Total state funding expected in FY14/15 is $554,000.

EXPENDITURES IN THE RCPA FY 13/14 FINAL BUDGET INCLUDE:

- **Outside Contracts/Services**
  
  Items considered outside contracts or services include RCPA staff time and the annual audit services; county services such as financial management, claims processing, budget preparation and general accounting; consultant contracts for support on the Shift Sonoma County project and the delivery of Bay Area Regional Energy Network (BayREN) energy efficiency programs; website development and support; and legal counsel. The total budget for FY14/15 for these costs is $1,195,400.

  The FY14/15 budget reflects the salary and benefits for two RCPA positions – the Deputy Director of Climate Programs and the Climate Action Planner position – as well as a percentage of the Executive Director’s salary and benefits and SCTA staff time to support the Shift Sonoma County project.

- **Operational Expenses**
  
  Items considered operational expenses include office supplies, office lease, printing, postage, insurance, travel, staff development, event registrations, and other related categories. This section of the budget also includes payments related to the Pay As You Save program expenses. The total amount requested for these items in the FY14/15 budget is $53,916.

**Policy Impacts:**

Adoption of the RCPA budget for FY14/15 will establish the program activity level and ability to deliver on the RCPA’s Mission, Goals, and Objectives.

**Fiscal Impacts:**

Overall the RCPA budget is larger this year due to the increased work load and new grant funding.

**Staff Recommendation:**

In order to continue operation, the RCPA must adopt a Final Budget for FY14/15 by October 31, 2014. The RCPA should consider the proposed RCPA Final Budget and if it meets with the Board’s approval, adopt the FY14/15 RCPA Final Budget.

Adoption of Resolution No. 2014-004 adopting the FY14/15 RCPA Final Budget requires a 2/3-majority vote. Therefore, the budget MUST receive eight (8) affirmative votes to pass.
RESOLUTION OF THE BOARD OF DIRECTORS OF THE
SONOMA COUNTY REGIONAL CLIMATE PROTECTION
AUTHORITY, COUNTY OF SONOMA, STATE OF CALIFORNIA,
ADOPTING A FINAL BUDGET FOR FISCAL YEAR 2014/2015.

WHEREAS, a Final Budget for Fiscal Year 2014/2015 has been prepared by the Executive
Director, reviewed by the Sonoma County Regional Climate Protection Authority and attached
as Exhibit A; and

WHEREAS, the Final Budget for Fiscal Year 2014/2015 includes a contribution from the Cities
and County partnering agencies for work associated with the Sonoma County Regional
Climate Protection Coordination Plan effort, attached hereto as Exhibit B.

NOW, THEREFORE, BE IT RESOLVED that the Fiscal Year 2014/2015 Final Budget for the
Sonoma County Regional Climate Protection Authority, attached hereto and marked Exhibit A,
is hereby adopted.

BE IT FURTHER RESOLVED that the Cities and County of Sonoma Partnering agencies will
contribute revenue as described in Exhibit B payable by the first day in July of the Fiscal Year
2014/2015 to the Sonoma County Regional Climate Protection Authority.

BE IT FURTHER RESOLVED that the Executive Director, acting as Clerk of the Authority,
shall deliver a certified copy of this resolution to the Sonoma County Auditor-Controller.

THE FOREGOING RESOLUTION was moved by Director ____, seconded by Director ____,
and approved by the following vote:

Director Allen   Director Carlstrom   Director Chambers   Director Gallian   Director Gurney   Director Harris
                    _______________           _______________           _______________           _______________           _______________
Director Landman   Director Mackenzie   Director McGuire   Director Rabbitt   Director Russell   Director Zane
                     _______________           _______________           _______________           _______________           _______________

Ayes:                              Noes:                              Absent:                              Abstain:

SO ORDERED

I, the undersigned, certify that the foregoing resolution was duly adopted at a regular meeting
of the Board of Directors of the Regional Climate Protection Authority held on October 13,
2014.

Suzanne Smith, Executive Director
Clerk, Regional Climate Protection Authority
## Sonoma County Regional Climate Protection Authority

**FY 2014-15 FINAL BUDGET**

**Budget Fund #74601**

### Exhibit A

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<th><strong>Percent</strong></th>
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<td><strong>Budgeted</strong></td>
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<th><strong>Total Expenditures</strong></th>
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<td>119,638</td>
<td>127,837</td>
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<th><strong>Starting Fund Balance</strong></th>
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<td>127,837</td>
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## FY2014-15 RCPA Contribution

### Population As of January 1, 2013

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<th>Amount</th>
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<td>Cotati</td>
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<td>1,722</td>
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<td>Healdsburg</td>
<td>11,509</td>
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<td>2,710</td>
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<td>Petaluma</td>
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<td>11.9905%</td>
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<td>County</td>
<td>147,696</td>
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|                | 490,423    | 100.0000%   | 115,500 |

|                | California Department of Finance - January 1, 2013 - Based on published population by entity. |

### Expenditures

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<td>SCWA</td>
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<tr>
<td>SCTA</td>
<td>-</td>
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|                | 60,000    | 175,500     |

|                | Grand Total | 175,500     |
Staff Report

To: Sonoma County Transportation Authority
From: James R. Cameron, Deputy Director of Projects and Programming
Item: 4.7.3 – FY14/15 Measure M Final Budget
Date: October 13, 2014

Issue:
Shall the SCTA adopt a final budget for Measure M for FY14/15?

Background:
By October of each year, the SCTA must adopt three Final Budgets in order for operations to continue. The three budgets cover the SCTA operations, Measure M and the Transportation Fund for Clean Air (TFCA).

This staff report covers the FY14/15 Measure M Final Budget. Prior year information is included with FY13/14 actual revenues and expenditures.

Under the Measure M program, the SCTA must adopt a summary budget that includes all the individual budgets for each program category included in the measure as well as separate budgets for the bond proceeds and bond debt service. Once revenue for the full sales tax program has been estimated it is then assigned to each program category based on the percent prescribed in Measure M. The Measure M Final Budget also includes anticipated expenses related to projects and administration within each program category. This budget action enables Measure M funds to be kept separately from other SCTA funds.

The Measure M Final Budget for FY14/15 has been prepared assuming a 3% growth in sales tax revenue projection over the FY13/14 actual sales tax revenues. The sales tax revenue projections are based on revenues received from the Board of Equalization (BOE). BOE revenues are received approximately three months behind fiscal year reporting timelines. Per generally accepted accounting principles (GAAP), SCTA reports revenues when they are earned and can be measured. Due to the length of time between when SCTA earns sales tax revenues and when the BOE sends those funds to the SCTA, SCTA needs to establish a sales tax receivable at the end of each fiscal year. The County’s FAMIS (Financial Accounting Management Information System) entry is made by projecting the revenues for the first two months of the next fiscal year to estimate the final year end sales tax revenue amount. Therefore, the first two months of sales tax revenues in FY14/15 are booked as receivables in FAMIS FY13/14. As a result, BOE revenues and FAMIS sales tax revenues are out of sync at the same moment in time. As of 7/1/2014 the County’s new account system is EFS (Enterprise Financial System). EFS and BOE numbers will also be out of sync, in order to meet GAAP.

In addition to sales tax revenue, the Measure M Final Budget for FY14/15 includes a projection on interest earned on deposits as well as reimbursements from other agencies based on cooperative agreements. Reimbursement revenue includes anticipated deposits from the City of Petaluma for design of the Rainier structure as part of MSN-C2, deposits from the City of Petaluma for the construction of the Old Redwood Highway Interchange with the Highway 101 Central-C project, deposits from the County of Sonoma for the construction of the Airport Boulevard Interchange with the Highway 101 North-B project, deposits from
Caltrans for design services during construction for several Highway 101 HOV lane projects and deposits from Caltrans Local Assistance for the federally reimbursable design of the Highway 101 Marin Sonoma Narrows Median Widening project (MSN B2 Phase 2).

The Measure M Cash Flow Model incorporates audited sales tax revenues. The expenditures associated with Measure M are focused on project costs and administration. The FY14/15 Measure M Final Budget includes funding for all of the program categories including the following specific items:

- Project allocations including construction capital & support, right-of-way capital & support, conservation mitigation credits, and pre-construction project development phases in each program category
- Consultant services from URS and BKF for design services for Highway 101; KNN for financial advisory services; GCP for project management; and Pisenti & Brinker, LLP, for audit services
- Accounting services
- Legal services (including legal services related to right-of-way acquisitions on Hwy 101 projects)
- Office expenses and printing services
- SCTA staff
- Bond interest and principal payments

As of FY 13/14 all of the bond funds issued have been expended. The budget for FY14/15 includes ongoing debt service expenditures for 2008 & 2011 Bonds interest and principal. There is a planned loan from the LSP program to the Bike/Pedestrian program estimated at $1.7 million that is part of the budget this year. The loan from the LSP program to the Rail program approved in FY 13/14 will begin making repayments. These loans were authorized in the Measure M Strategic Plan.

**Policy Impacts:**
None

**Fiscal Impacts:**
Sales tax revenues (BOE revenues) for FY13/14 increased 8.2% over FY12/13 revenues. SCTA is projecting that revenues will continue to grow at a 3% rate for FY14/15. Significant expenditures are anticipated due to both project development work and construction operations on Highway 101 projects, Local Streets Projects (LSP), and Bicycle and Pedestrian projects. Programming for future projects is considerably lower than FY 14/15. Future construction projects will need new sources of funds to construct.

The Measure M Cash Flow Model incorporates all the planned expenditures and anticipated revenues and maintains a small positive cash flow balance and reserve fund for Hwy 101 projects, a positive balance for the LSP program, and positive balance (including the 14/15 loan from the LSP program) for the Bike/Pedestrian program. The Local Streets Rehabilitation (LSR), Local Bus Transit (LBT), and Administration programs will continue to receive allotted payments based on actual sales tax revenues. Interest and principal payments for the 2008 Series Bonds and 2011 Series Bonds are also included in the Cash Flow Model.

**Staff Recommendation:**
The SCTA must adopt a Measure M Final Budget for FY14/15 by October 31, 2014. The SCTA should consider the proposed Measure M Final Budgets and summary and, if they meet with the Board’s approval, adopt the Final Budget.

Adoption of Resolution No. 2014-022 adopting the FY14/15 Measure M Final Budget requires a 2/3-majority vote. **Therefore, the budget MUST receive eight (8) affirmative votes to pass.**
Measure M Board of Equalization Sales Tax
Revenues as of 6/30/14

<table>
<thead>
<tr>
<th>Fiscal Year Revenue Re-Cap as of 6/30/2014</th>
<th>BOE YTD</th>
<th>% Change</th>
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<tr>
<td>FY06/07</td>
<td>$19,555,567.21</td>
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<tr>
<td>FY09/10</td>
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<td>FY10/11</td>
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<tr>
<td>FY11/12</td>
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<tr>
<td>FY12/13</td>
<td>$20,829,458.29</td>
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BOE - Board of Equalization Deposits.
Deposits are estimates which are 2 month behind the sales tax being collected.
Estimated monthly BOE deposits then receive a quarterly true-up.
Resolution Number 2014-022  
Sonoma County Transportation Authority  
Santa Rosa, California

October 13, 2014


WHEREAS, a Final Measure M Budget for Fiscal Year 2014/2015 has been prepared by the Executive Director, reviewed by the Sonoma County Transportation Authority and attached as Exhibit A; and

NOW, THEREFORE, BE IT RESOLVED that the Fiscal Year 2014/2015 Final Measure M Budget for the Sonoma County Transportation Authority, attached hereto and marked Exhibit A, is hereby adopted.

BE IT FURTHER RESOLVED that the Executive Director, acting as Clerk of the Authority, shall deliver a certified copy of this resolution to the Sonoma County Auditor-Controller.

THE FOREGOING RESOLUTION was moved by Director _____, seconded by Director _____, and approved by the following vote:

Director Allen  Director Landman
Director Carlstrom  Director Mackenzie
Director Chambers  Director McGuire
Director Gallian  Director Rabbitt
Director Gurney  Director Russell
Director Harris  Director Zane

Ayes:  Noes:  Absent:  Abstain:

SO ORDERED

I, the undersigned, certify that the foregoing resolution was duly adopted at a regular meeting of the Board of Directors of the Sonoma County Transportation Authority held on October 13, 2014.

_____________________________________________________
Suzanne Smith, Executive Director  
Clerk, Sonoma County Transportation Authority
## Sonoma County Transportation Authority
## Measure M FY 2014-2015 Final Budget
## Budget Summary for All Programs

### Measure M FY 2014-2015 Final Budget

<table>
<thead>
<tr>
<th>Sub-Object</th>
<th>Account</th>
<th>Description</th>
<th>Actual FY 12-13</th>
<th>Budgeted FY 12-13</th>
<th>Actual FY 13-14</th>
<th>Budgeted FY 13-14</th>
<th>Final FY 14-15</th>
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### Total Revenues

- Total Revenues: $23,847,786
- Budgeted Revenues: $24,648,875
- Actual Revenues: $32,273,928
- Final Revenues: $33,976,141
- Ending Fund Bal: $31,981,353

### Total Expenses

- Total Expenses: $28,362,529
- Beginning Fund Balance: $74,501,812
- Ending Fund Balance: $69,527,294

Beginning Fund Bal: 74,501,812
Revenues: 23,847,786
Expenses: (28,362,529)
Audit Adjustments: (459,775)
Change in Fund Balance: (4,974,518)
Ending Fund Bal: 69,527,294

9/23/2014 12:14 PM
### Sonoma County Transportation Authority
#### Measure M FY 2014-2015 Final Budget

**Administration (1%)**

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#### Total Revenues

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<th>Subobject</th>
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#### Total Expenses

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<th>Account</th>
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### Sonoma County Transportation Authority

**Measure M FY 2014-2015 Final Budget**

Local Street Repairs (LSR - 20%)

Dept ID: 70030200  
Index: 793208

Fund 74652

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<th>Final FY 14-15</th>
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<tbody>
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<td>40301</td>
<td>Sales/Use Tax</td>
<td>4,094,276</td>
<td>3,593,597</td>
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<td>4,235,140</td>
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<td>44002</td>
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<td>552,451</td>
<td>671,837</td>
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<td>Change in Encumbrances</td>
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### Sonoma County Transportation Authority

**Measure M FY 2014-2015 Final Budget**

**Local Street Projects (LSP - 20%)**

Dept ID: 70030300  
Index: 793307  
Fund 74653

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<td>Sales/Use Tax</td>
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<td>3,593,597</td>
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**Total Revenue**

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<th>Final FY 14-15</th>
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</thead>
<tbody>
<tr>
<td>4,424,539</td>
<td>3,854,312</td>
<td>4,235,881</td>
<td>4,342,467</td>
<td>5,014,010</td>
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<table>
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<th>Actual FY 13-14</th>
<th>Budgeted FY 13-14</th>
<th>Final FY 14-15</th>
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</thead>
<tbody>
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<td>51226</td>
<td>Consultants</td>
<td>-</td>
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<td>-</td>
<td>150,000</td>
<td>1,200,000</td>
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<tr>
<td>6300</td>
<td>52101</td>
<td>Misc Expense</td>
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<tr>
<td>6610</td>
<td>51211</td>
<td>Legal Services</td>
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**Total Expenses**

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<th>Actual FY 13-14</th>
<th>Budgeted FY 13-14</th>
<th>Final FY 14-15</th>
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<table>
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<th>24,994,353</th>
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<td>4,235,881</td>
<td>4,342,467</td>
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<td>(10,882,000)</td>
<td>(11,955,748)</td>
<td>(19,073,000)</td>
<td>(15,508,755)</td>
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## Sonoma County Transportation Authority
### Measure M FY 2014-2015 Final Budget
#### Highway 101 (40%)

### Fund 74654

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<th>Budgeted FY 13-14</th>
<th>Final FY 14-15</th>
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<tbody>
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**Total Revenue** 5,807,362 10,127,090 13,583,000 15,397,612 9,961,355

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<th>Actual FY 13-14</th>
<th>Budgeted FY 13-14</th>
<th>Final FY 14-15</th>
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</table>

**Total Expenses** 6,085,198 26,681,230 26,606,552 30,270,250 21,334,250


Revenues 5,807,362 10,127,090 13,583,000 15,397,612 9,961,355

Expenses (6,085,198) (26,681,230) (26,606,552) (30,270,250) (21,334,250)

Audit Adjustments (383,022) - (1,344,561) - -

Change in Encumbrances - - - - -

Change in Fund Balance (660,857) (16,554,140) (14,368,112) (14,872,638) (11,372,895)

Ending Fund Balance 29,756,291 13,863,008 15,388,179 14,883,653 4,015,284
## Sonoma County Transportation Authority
### Measure M FY 2014-2015 Final Budget
#### Highway 101 2008 Series Bonds Debt Service Fund

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<th>Actual FY 13-14</th>
<th>Budgeted FY 13-14</th>
<th>Final FY 14-15</th>
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<tr>
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<td>40301</td>
<td>Sales/Use Tax</td>
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**Total Revenue**

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<th>Budgeted FY 12-13</th>
<th>Actual FY 13-14</th>
<th>Budgeted FY 13-14</th>
<th>Final FY 14-15</th>
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<tr>
<td></td>
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<td></td>
<td>4,367,350</td>
<td>2,207,350</td>
<td>5,088,100</td>
<td>2,298,144</td>
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<th>Budgeted FY 12-13</th>
<th>Actual FY 13-14</th>
<th>Budgeted FY 13-14</th>
<th>Final FY 14-15</th>
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**Total Expenses**

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<th>Final FY 14-15</th>
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<tbody>
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<td>2,207,350</td>
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**Beginning Fund Balance**

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<th>557,207</th>
<th>2,717,207</th>
<th>2,717,207</th>
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<td>72,750</td>
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**Ending Fund Balance**

|                |          |                              | 2,717,207       | 557,207           | 2,789,957      | 0                | 2,789,957     |

**Total**

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**Ending Fund Balance**

<p>|                |          |                              | 2,717,207       | 557,207           | 2,789,957      | 0                | 2,789,957     |</p>
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<th>Budgeted FY 13-14</th>
<th>Final FY 14-15</th>
</tr>
</thead>
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Sonoma County Transportation Authority  
Measure M FY 2014-2015 Final Budget  
Highway 101 2011 Series Bonds Reserve

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<th>FY 13-14 Actual</th>
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<tr>
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Beginning Fund Balance 1,890,000  
Revenues -  
Expenses -  
Audit Adjustments -  
Change in Encumbrances -  
Change in Fund Balance -  
Ending Fund Balance 1,890,000
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<td>533,840</td>
<td>15,688</td>
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Beginning Fund Balance: 5,284,270
Revenues: 49,032
Expenses: (4,882,282)
Audit Adjustments: 54,732
Change in Encumbrances: -
Change in Fund Balance: (4,778,518)
Ending Fund Balance: 505,751
### Sonoma County Transportation Authority
#### Measure M FY 2014-2015 Final Budget
#### Highway 101 2011 Series Bonds - Debt Service Fund

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<th>Actual FY 13-14</th>
<th>Budgeted FY 13-14</th>
<th>Final FY 14-15</th>
</tr>
</thead>
<tbody>
<tr>
<td>1140</td>
<td>40301</td>
<td>Sales/Use Tax</td>
<td>1,107,313</td>
<td>1,093,754</td>
<td>1,097,081</td>
<td>684,150</td>
<td>1,092,141</td>
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<tr>
<td>3980</td>
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<td></td>
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<td>1,090,697</td>
<td>1,090,697</td>
<td>1,092,141</td>
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- Beginning Fund Balance: 392,989
- Revenues: 1,107,313
- Expenses: (1,093,753)
- Audit Adjustments: -
- Change in Encumbrances: -
- Change in Fund Balance: 13,560
- Ending Fund Balance: 406,549

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<tr>
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## Sonoma County Transportation Authority
### Measure M FY 2014-2015 Final Budget
#### Transit (10%)

**Dept ID:** 70031000  
**Index:** 793505  
**Fund:** 74660

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<th>Actual FY 13-14</th>
<th>Budgeted FY 13-14</th>
<th>Final FY 14-15</th>
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**Total Revenue**

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<table>
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<th>Actual FY 13-14</th>
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<th>Final FY 14-15</th>
</tr>
</thead>
<tbody>
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<td>6300</td>
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<td>Misc Expense</td>
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**Total Expenses**

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</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1,990,944</td>
<td>2,335,638</td>
<td>2,046,914</td>
<td>2,426,129</td>
<td>2,455,688</td>
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**Beginning Fund Balance**

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<th>Final FY 14-15</th>
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<td>2,058,106</td>
<td>2,110,752</td>
<td>2,119,770</td>
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<td>(1,990,944)</td>
<td>(2,335,638)</td>
<td>(2,046,914)</td>
<td>(2,426,129)</td>
<td>(2,455,688)</td>
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**Ending Fund Balance**

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<th>Actual FY 13-14</th>
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<td>Actual FY 13-14</td>
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<th>Budgeted FY 12-13</th>
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<th>Budgeted FY 13-14</th>
<th>Final FY 14-15</th>
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<td>4,443,311</td>
<td>4,443,311</td>
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<tr>
<td></td>
<td></td>
<td><strong>Total Expenses</strong></td>
<td>688</td>
<td>1,156,513</td>
<td>4,444,023</td>
<td>4,444,411</td>
<td>1,003,000</td>
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<table>
<thead>
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<th>Actual FY 12-13</th>
<th>Budgeted FY 12-13</th>
<th>Actual FY 13-14</th>
<th>Budgeted FY 13-14</th>
<th>Final FY 14-15</th>
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</thead>
<tbody>
<tr>
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<td>1,257,322</td>
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<td>307,417</td>
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<tr>
<td>Expenses</td>
<td>(688)</td>
<td>(1,156,513)</td>
<td>(4,444,023)</td>
<td>(4,444,411)</td>
<td>(1,003,000)</td>
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</tr>
<tr>
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<td>44002</td>
<td>Interest on Pooled Cash</td>
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<tr>
<td>4680</td>
<td>47111</td>
<td>Bond Proceeds</td>
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<td></td>
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<td><strong>Total Revenue</strong></td>
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<tr>
<td>6300</td>
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<tr>
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<td></td>
<td><strong>Total Expenses</strong></td>
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Beginning Fund Balance: 630,000
Revenues: -
Expenses: -
Audit Adjustments: -
Change in Encumbrances: -
Change in Fund Balance: -
Ending Fund Balance: 630,000
### Sonoma County Transportation Authority
#### Measure M FY 2014-2015 Final Budget
#### Passenger Rail 2011 Bond Issue

**Fund 74663**

<table>
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<tr>
<th>Subobject</th>
<th>Account</th>
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<th>Actual FY 13-14</th>
<th>Budgeted FY 13-14</th>
<th>Final FY 14-15</th>
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</thead>
<tbody>
<tr>
<td>1140</td>
<td>40301</td>
<td>Sales/Use Tax</td>
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<td>-</td>
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<td>44002</td>
<td>Interest on Pooled Cash</td>
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<td>15,270</td>
<td>9,658</td>
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<td>Bond Proceeds</td>
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<td>Total Revenue</td>
<td>35,320</td>
<td>15,270</td>
<td>9,658</td>
<td>1,379</td>
<td>2,500</td>
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<td>Bond - Principal Payments</td>
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<td>53103</td>
<td>Bond - Interest Payments</td>
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<td>6,123,260</td>
<td>553,116</td>
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<td>5,591,573</td>
<td>6,123,260</td>
<td>553,116</td>
<td>553,116</td>
<td>10,778</td>
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</table>

**Beginning Fund Balance**

- 6,107,989
- 6,107,989
- 551,736
- 551,736
- 8,278

**Revenues**

- 35,320
- 15,270
- 9,658
- 1,379
- 2,500

**Expenses**

- (5,591,573)
- (6,123,260)
- (553,116)
- (553,116)
- (10,778)

**Audit Adjustments**

- -
- -
- -
- -
- -

**Change in Encumbrances**

- -
- -
- -
- -
- -

**Change in Fund Balance**

- (5,556,233)
- (6,107,990)
- (543,458)
- (551,737)
- (8,278)

**Ending Fund Balance**

- 551,736
- (1)
- 8,278
- (1)
- 0
### Sonoma County Transportation Authority

**Measure M FY 2014-2015 Final Budget**

**Passenger Rail 2011 Bond Debt Service**

<table>
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<th>Subobject</th>
<th>Account</th>
<th>Description</th>
<th>Actual FY 12-13</th>
<th>Budgeted FY 12-13</th>
<th>Actual FY 13-14</th>
<th>Budgeted FY 13-14</th>
<th>Final FY 14-15</th>
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<tbody>
<tr>
<td>1140</td>
<td>40301</td>
<td>Sales/Use Tax</td>
<td>369,104</td>
<td>364,735</td>
<td>365,694</td>
<td>228,050</td>
<td>364,047</td>
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<td><strong>Total Revenue</strong></td>
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<td>369,104</td>
<td>364,735</td>
<td>365,694</td>
<td>228,050</td>
<td>374,825</td>
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<td>374,825</td>
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<td>(364,735)</td>
<td>(363,566)</td>
<td>(363,566)</td>
<td>(364,047)</td>
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<td>1,700,000</td>
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<td>848,961</td>
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<tr>
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<td>Interest</td>
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<td>-</td>
<td>-</td>
<td>8,500</td>
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<tr>
<td>8010</td>
<td>53501</td>
<td>Contributions to Other Govts.</td>
<td>556,310</td>
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<td>103,688</td>
<td>1,431,935</td>
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<td>Total Expenses</td>
<td>556,310</td>
<td>1,367,000</td>
<td>103,708</td>
<td>1,431,935</td>
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</tr>
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</table>
| Beginning Fund Balance | 837,498 | 837,498 | 1,195,855 | 1,195,855 | 1,923,259
| Revenues | 826,786 | 722,128 | 831,111 | 848,961 | 2,556,644
| Expenses | (556,310) | (1,367,000) | (103,708) | (1,431,935) | (4,265,214)
| Audit Adjustments | 87,881 | - | - | - | -
| Change in Encumbrances | - | - | - | - | -
| Change in Fund Balance | 358,358 | (644,872) | 727,403 | (582,974) | (1,708,570)
| Ending Fund Balance | 1,195,855 | 192,626 | 1,923,259 | 612,881 | 214,689
Staff Report

To: SCTA Directors

From: Suzanne Smith, Executive Director

Item: 4.7.4 – FY14/15 Transportation Fund for Clean Air Final Budget

Date: October 14, 2013

Issue:

Shall the SCTA adopt a final Budget for the Transportation Fund for Clean Air program for FY14/15?

Background:

By October of each year, the SCTA must adopt three Final Budgets in order for operations to continue. The three budgets cover the SCTA operations, Measure M and the Transportation Fund for Clean Air (TFCA).

This staff report covers the FY14/15 TFCA Final Budget. As is customary, the budget includes revenue from the Bay Area Air Quality Management District and the programmed funds available to each jurisdiction. The projects included in the FY14/15 budget are the same projects approved by the SCTA in May 2014. The funds allocated for each project are then assigned to each jurisdiction in which the project is proposed.

Policy Impacts:

None

Fiscal Impacts:

If a final budget is not adopted funds cannot be reimbursed to jurisdiction that expended money on projects and that could result in project delays, cash flow problems or related issues.

Staff Recommendation:

The SCTA must adopt the FY14/15 TFCA Final Budget by October 31, 2014. The SCTA should consider the proposed TFCA Final Budget and if it meets with the Board’s approval, adopt the FY14/15 TFCA Final Budget.

Adoption of Resolution No. 2014-023 adopting the FY14/15 TFCA Final Budget requires a 2/3-majority vote. Therefore, the budget MUST receive eight (8) affirmative votes to pass.
RESOLUTION OF THE BOARD OF DIRECTORS OF THE
SONOMA COUNTY TRANSPORTATION AUTHORITY, COUNTY
OF SONOMA, STATE OF CALIFORNIA, ADOPTING THE
TRANSPORTATION FUND FOR CLEAN AIR FINAL BUDGET
FOR FISCAL YEAR 2014/2015.

WHEREAS, a Transportation Fund for Clean Air Final Budget for Fiscal Year 2014/2015 has
been prepared by the Executive Director, reviewed by the Sonoma County Transportation
Authority and attached as Exhibit A; and

NOW, THEREFORE, BE IT RESOLVED that the Fiscal Year 2014/2015 Final Transportation
Fund for Clean Air Budget for the Sonoma County Transportation Authority, attached hereto
and marked Exhibit A, is hereby adopted.

BE IT FURTHER RESOLVED that the Executive Director, acting as Clerk of the Authority,
shall deliver a certified copy of this resolution to the Sonoma County Auditor-Controller.

THE FOREGOING RESOLUTION was moved by Director ____, seconded by Director ____,
and approved by the following vote:

<table>
<thead>
<tr>
<th>Director Allen</th>
<th>Director Landman</th>
</tr>
</thead>
<tbody>
<tr>
<td>Director Carlstrom</td>
<td>Director Mackenzie</td>
</tr>
<tr>
<td>Director Chambers</td>
<td>Director McGuire</td>
</tr>
<tr>
<td>Director Gallian</td>
<td>Director Rabbitt</td>
</tr>
<tr>
<td>Director Gurney</td>
<td>Director Russell</td>
</tr>
<tr>
<td>Director Harris</td>
<td>Director Zane</td>
</tr>
</tbody>
</table>

Ayes:            Noes:            Absent:  Abstain:  

SO ORDERED

I, the undersigned, certify that the foregoing resolution was duly adopted at a regular meeting
of the Board of Directors of the Sonoma County Transportation Authority held on October 13,
2014.

__________________________
Suzanne Smith, Executive Director
Clerk, Sonoma County Transportation Authority
## Sonoma County Transportation Authority - TFCA Program
### FY 2014-15 Final Budget

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<th></th>
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</thead>
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<td>Interest on Pooled Cash</td>
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### Expenditures

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### Prior Year Expenditures

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<td>741,558</td>
<td>921,443</td>
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<td>460,419</td>
<td>235,923</td>
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### Starting Fund Balance

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<td>121,220.31</td>
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### Total Revenue

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<td>595,975</td>
<td>599,249.34</td>
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### Total Expenditures

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<td>(979,905)</td>
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<td>(306,891)</td>
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### Less Change in Encumbrances

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### Change in Unreserved Fund Balance

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Staff Report

To: SCTA Board of Directors
From: Suzanne Smith
Item: 5.2 – Regional Agency Reports: SMART, NCRA, MTC, ABAG, BAAQMD, CALCOG, Self Help Counties Coalition, Sonoma Clean Power
Date: October 13, 2014

Issue:
Recent updates from:
- North Coast Railroad Authority
- Metropolitan Transportation Authority (MTC)
- California Association of Councils of Government (CALCOG)
- Association of Bay Area Governments (ABAG)
- Bay Area Air Quality Management District (BAAQMD)
- Self Help Counties Coalition
- Sonoma Clean Power

Background:
The following links and materials provide information regarding various regional agencies and issues:
- MTC Executive Director’s Report
- California Association of Councils of Government (CALCOG)
- Sonoma/Marin Area Rail Transit (SMART)

Staff Recommendation:
Informational item only.
Technical Advisory Committee

MEETING AGENDA

September 25, 2014 1:30 PM
Sonoma County Transportation Authority
SCTA Large Conference Room
490 Mendocino Avenue, Suite 206
Santa Rosa, California  95401

ITEM

1. Introductions
2. Public Comment
3. Approval of Minutes, July 24, 2014* – DISCUSSION / ACTION
4. Comprehensive Transportation Plan Update – DISCUSSION / ACTION
   4.1 2015 CTP Performance Measures, Current Conditions*
   4.2 CTP Guidelines – presented to MTC Planning Committee on September 5. Commission will consider item on September 24.
   4.3 Ad hoc subcommittee to choose online engagement tool for 2015 CTP –recruitment.
5. Measure M DISCUSSION
   5.1 Measure M Annual Reporting Status Update*
   5.2 Measure M Invoicing / Appropriation Status*
6. Highway 101 Ramp Metering Schedule Update – DISCUSSION
7. Regional Information Update – DISCUSSION
   7.1 SPOC training September 30, 2014 9:30-3:30*
   7.2 FFY14/15 Annual Obligation Plan*
   7.3 Final Pavement Condition Summary Report to be released in Mid October.
8. Rail Update - DISCUSSION
9. Other Business / Comments / Announcements - DISCUSSION
10. Adjourn – ACTION

*Materials attached.
**Handout at meeting

The next SCTA meeting will be held October 13, 2014
The next TAC meeting will be held on October 23, 2014
Copies of the full Agenda Packet are available at www.sctainfo.org

DISABLED ACCOMMODATION: If you have a disability that requires the agenda materials to be in an alternate format or that requires an interpreter or other person to assist you while attending this meeting, please contact SCTA at least 72 hours prior to the meeting to ensure arrangements for accommodation.

SB 343 DOCUMENTS RELATED TO OPEN SESSION AGENDAS: Materials related to an item on this agenda submitted to the Technical Advisory Committee after distribution of the agenda packet are available for public inspection in the Sonoma County Transportation Authority office at 490 Mendocino Ave., Suite 206, during normal business hours.

Pagers, cellular telephones and all other communication devices should be turned off during the committee meeting to avoid electrical interference with the sound recording system.

TAC Voting member attendance – (6 Month rolling 2014)

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SCTA Citizens Advisory Committee

MEETING AGENDA

September 29, 2014 at 4:00 p.m.
Sonoma County Transportation Authority
SCTA Large Conference Room
490 Mendocino Avenue, Suite 206
Santa Rosa, California 95401

ITEM

1. Introductions
2. Public Comment
3. Approval of Notes June 30, 2014*
4. Measure M – DISCUSSION/ACTION
   a. Measure M Project Presentation – SMART
   b. Measure M status of reporting letters
   c. Measure M Annual Report development
   d. Measure M Financial Reports*
5. Communities of Concern/Disadvantaged Communities determination* - DISCUSSION/ACTION
6. Request for qualifications for car sharing program* - DISCUSSION
7. Comprehensive Transportation Plan update-DISCUSSION-ACTION
   a. 2015 CTP Performance Measures, Current Conditions*
   b. CTP Guidelines – presented to the MTC Planning Committee on Sept 5. Commission will consider item on Sept 24.
   c. Ad hoc subcommittee to choose online engagement tool for 2015 CTP– recruitment.
8. Updates - DISCUSSION
   a. Highway 101- Ramp Metering
   b. SMART
9. Announcements
10. Adjourn

*Materials attached.

The next SCTA/RCPA meeting will be October 13, 2014
The next CAC meeting will be October 27, 2014
Copies of the full Agenda Packet are available at www.sctainfo.org
Planning Directors/Planning Advisory Committee

MEETING AGENDA

Thursday, September 25, 2014, 9:30 a.m.
Sonoma County Transportation Authority
SCTA Large Conference Room

ITEM
1. Introductions
2. Public Comment
3. Approval of the agenda – changes, additional discussion items- ACTION
4. Review Meeting Notes from August 28, 2014 – ACTION*
5. Round table members discussion
6. Climate Action 2020
   6.1. Climate Protection Campaign White Paper- Proven and Promising GHG Reduction Measures*
   6.2. Update
7. Request for qualifications for car sharing program*
8. Comprehensive Transportation Plan update-DISCUSSION-ACTION
   8.1. Project Performance*
   8.2. CTP Guidelines – presented to the MTC Planning Committee on Sept 5. Commission will consider item on Sept.
   8.3. Ad hoc subcommittee to choose online engagement tool for 2015 CTP– recruitment.
9. Legislative Updates – SB 743 – the OPR releases updates to the CEQA guidelines
10. Other Business /Next agenda
11. Adjourn

*Attachment

The next SCTA meeting will be held October 13, 2014
The next Planning Directors/PAC meeting will be held October 23, 2014

Copies of the full Agenda Packet are available at www.sctainfo.org. DISABLED ACCOMMODATION: If you have a disability that requires the agenda materials to be in an alternate format or that requires an interpreter or other person to assist you while attending this meeting, please contact SCTA at least 72 hours prior to the meeting to ensure arrangements for accommodation. SB 343 DOCUMENTS RELATED TO OPEN SESSION AGENDAS: Materials related to an item on this agenda submitted to the Planning Advisory Committee after distribution of the agenda packet are available for public inspection in the Sonoma County Transportation Authority office at 490 Mendocino Ave., Suite 206, during normal business hours. Pagers, cellular telephones and all other communication devices should be turned off during the committee meeting to avoid electrical interference with the sound recording system.
Countywide Bicycle & Pedestrian Advisory Committee
MEETING AGENDA

September 23, 2014 1:30 PM
Sonoma County Transportation Authority
SCTA Large Conference Room
490 Mendocino Avenue, Suite 206
Santa Rosa, California 95401

ITEM

1. Introductions
2. Public Comment
3. Approval of Meeting Notes: July 22, 2014 – DISCUSSION / ACTION*
4. Roundtable Updates
   4.1. Member Updates
   4.2. Other Entities’ Updates
5. 2015 Comprehensive Transportation Plan Update – Janet Spilman – DISCUSSION*
   5.1. Staff Report - Bicycle and Pedestrian Project Lists for CTP – Dana Turrey - DISCUSSION / ACTION*
6. Bicycle and Pedestrian Count Program
   6.1. Staff Report - Automated Counters – Chris Barney - DISCUSSION*
7. TDA3/TFCA Quarterly Report for Q4 FY13/14 - INFORMATION*
8. Articles of Interest – INFORMATION
   8.1. Is That All They Want? Millennials and Bike Lanes: Young Adults Are Prize Residents in Cities, and Urban Planners Say They Want to Bike to Work - National Journal http://www.nationaljournal.com/policy/insiders/transportation/is-that-all-they-want-millenials-and-bike-lanes-20140804
   8.2. California's 3-foot rule for cars passing bikes to take effect – SF Gate http://www.sfgate.com/default/article/California-s-3-foot-rule-for-cars-passing-bikes-5740392.php
9. Other Business / Comments / Announcements
10. Adjourn – ACTION

*Materials attached.

The next SCTA meeting will be held October 13, 2014
The next CBPAC meeting will be held November 25, 2014

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Transit Paratransit Coordinating Committee

MEETING AGENDA

September 16, 2014, 2014 1:30-3:00 PM**

Sonoma County Transportation Authority
SCTA Large Conference Room
490 Mendocino Avenue, Suite 206
Santa Rosa, California 95401

ITEM

1. Introductions

2. Public Comment

3. Approval of Meeting Notes: July 15, 2014 – DISCUSSION / ACTION*

4. Roundtable Updates
   4.1. Transit / Paratransit Operators
   4.2. Other Entities

5. 2015 Comprehensive Transportation Plan Update – Janet Spilman – DISCUSSION

6. Staff Report – Section 5310 Pending Call for Projects – Dana Turrey / Tracy Repp / Michael Ivory - DISCUSSION*

7. Short-Range Transit Plan – Applications Due September 19 – Information available online at http://apps.mtc.ca.gov/meeting_packet_documents/agenda_2268/12_SRTP_Update.pdf – INFORMATION

8. Lifeline Cycle 4 Draft Program Guidelines are available for review online at http://apps.mtc.ca.gov/meeting_packet_documents/agenda_2268/10_0_Lifeline_Cycle_4_Memo.pdf - INFORMATION

9. New Members – DISCUSSION

10. Other Business / Comments / Announcements

11. Adjourn – ACTION

*Materials attached

The next SCTA meeting will be held October 13, 2014
The next TPCC meeting will be held November 18, 2014

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DISABLED ACCOMMODATION: If you have a disability that requires the agenda materials to be in an alternate format or that requires an interpreter or other person to assist you while attending this meeting, please contact SCTA at least 72 hours prior to the meeting to ensure arrangements for accommodation.

SB 343 DOCUMENTS RELATED TO OPEN SESSION AGENDAS: Materials related to an item on this agenda submitted to the Transit Paratransit Coordinating Committee after distribution of the agenda packet are available for public inspection in the Sonoma County Transportation Authority office at 490 Mendocino Ave., Suite 206, during normal business hours. Pagers, cellular telephones and all other communication devices should be turned off during the committee meeting to avoid electrical interference with the sound recording system.