Rosemount Climate Change Education

Prepared by

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University of Minnesota
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On behalf of

The City of Rosemount

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Resilient Communities Project

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Executive Summary

This report is an outcome of a project on climate change carried out during spring 2015. It suggests a method for gauging the current level of citizen engagement in climate change issues, and suggests future steps to design a program to effectively educate and engage local citizens. The City of Rosemount and relevant stakeholders may find this report helpful when it undertakes the task of engaging the local residents in the wide-ranging topics of 'climate change'.

A two-pronged survey was designed and introduced to identify Rosemount residents' knowledge and understanding on climate change issues. The survey included both closed and open-ended questions allowing the residents to express their opinions freely. The residents shared their experiences about surrounding issues and indicated their willingness to participate in various climate change activities in order to build a sustainable community.

In addition to the survey, we had informal conversations with local residents, studied information received from the City office, and reviewed relevant resources that were available online. Despite the time constraints, our analysis was able to generate important information required for this project. Based on our findings and learnings, we propose the following framework as core elements of a program planning and implementation.

Firstly, the City of Rosemount engages in its own campaign/commitment to reduce energy use by the City pursuing recognition through a program such as the Environmental Protection Agency's (EPA) Energy Star Certification. The City can formally incorporate the issues of climate change into its comprehensive plans and actions e.g. installing or purchasing renewable energy sources for use at municipal buildings. Secondly, the City forms a committee

of community volunteers who will collaborate with the City and spearhead education and outreach campaigns in the community. The volunteers can be pulled from multiple sectors, creating a team that includes both internal and external people. They can be trained locally on best-practices of climate change and citizen engagement. Thirdly, the City creates buy-in and sense of urgency related to climate change by recruiting participants to a program in which residents commit to reducing a percentage of their personal energy use. The participants' involvement in programming related to climate change (e.g. hosting an Energy Star Competition as mentioned above) can be enhanced by mobilizing local organizations and groups. Fourthly, the City surveys the participants to establish baseline in energy reduction campaigns regarding their motives for participating in and their knowledge of the issues of climate change. Then, the City hosts a kickoff event, partnering with different community groups e.g. schools, businesses, and community organizations. Finally, the City and its partners can implement a series of educational programs on climate change issues. They should be able to draw on experts in the community and outside organizations to provide these programs. Such programs should be adapted and modified based on local learnings documented through a monitoring and evaluation mechanism.

In the coming years, it is critical that the City allocates adequate resources towards community education and engagement in order for its initiatives to be successful. The experience of other cities suggests that staging competitions between individuals or organizations is an effective way to engage communities around climate change issues. Promoting outcomes that serve the interests of everyone involved in the program is very crucial. Therefore, the objectives should remain an integral and valued part of the entire life-cycle of a program reflecting the shared vision of key stakeholders from the very beginning.

Acknowledgements

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We are thankful to the City Planner Jason Lindahl and his team at the City of Rosemount for their cooperation with us in this project. The success of this project would not have been possible without the people of Rosemount who generously welcomed us and provided their opinions and experiences related to climate change and its surrounding issues. We are grateful to them and wish them to be a climate friendly, vibrant and sustainable community.

Our sincere thanks are extended to Dr. Catherine Twohig for leading and guiding us in this project and ensuring that we have learned a great deal in planning an adult education program.

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Abbreviations

CIT   : California Institute of Technology

EPA   : Environmental Protection Agency

IIED   : International Institute for Environment and Development

MAVA : Minnesota Association of Volunteer Administration

NCSE : National Center for Science Education

NOAA : National Oceanic and Atmospheric Administration

RCP   : Resilient Communities Project

UN   : United Nations

USDA : United States Department of Agriculture

WEO   : World Environmental Organization

RCP Rosemount/Climate Change

The City of Rosemount is in the early stages of its progress toward the goal of being a leader in the area of climate change mitigation and adaptation. As it proceeds through the planning and implementation stages of this process, understanding of issues surrounding climate change, and subsequent buy-in by the greater population, will be critical to its success. This project proposes a process of first assessing the current level of citizen engagement in climate change topics, and suggests future steps for the City of Rosemount to effectively educate and engage its citizens.

In order to develop a baseline of data, we conducted a test survey of a small sample of citizens in Rosemount. We then developed a set of guidelines for the design and implementation of a climate change education program that could be implemented in a city like Rosemount, based on similar programs across the country. The key stages of these programs include the early adoption of energy use reduction and climate change mitigation programs by the city, followed by the engagement of a community of volunteer leaders to champion the cause in the community. At this stage, the City may consider conducting its own needs assessment and then plan its programs accordingly.

Needs Assessment

On February 3, 2015 the group was presented with an opportunity to design a program that would get the local residents in the City of Rosemount engaged in the wide-ranging topic of 'climate change.' The Project Lead Jason Lindahl tasked the group with "funneling it down to something manageable," so that the City could begin to target the needs of its local constituents on the issues related to climate change. As a starting point suggested by Caffarella and Daffron [1], the group then quickly arrived at the consensus to conduct a structured and methodical 'needs assessment' by designing a two-pronged survey (Annex 1) which would reveal 1) What residents currently know and understand about issues related to climate change, 2) How they felt about surrounding issues and, finally 3) perhaps begin to uncover the ways in which the residents are willing to participate in various facets of building a sustainable community.

As previously stated, the survey was composed of two sections and is qualitative in nature because this platform not only lent itself to the parameters set forth by the city, but would also allow space for residents to express their opinions beyond simply responding to close-ended questions. The first section was comprised of six questions where participants were asked to circle their response to the corresponding question based a five-point sliding scale (1=Disagree, and 5=Strongly Agree). Section II asked participants answer on a more profound level by writing a more detailed response to open-ended questions such as "Briefly describe what you know and understand about climate change?" An important component to achieving better results in this section is to 1) Preface the survey with a conversation about the Resilient Communities Project (RCP) and its established goals and objectives, and 2) Expressing to the

interviewee that any answer is a good answer; there is no right or wrong, and if uncertain, it is perfectly acceptable to answer accordingly. As a result, the open-ended questions in Section II yielded not only more in-depth responses, but also exposed opinions related to climate change that raised a few eyebrows when the group began to analyze the data. Therefore, we recommend needs assessment utilizing these two types of sections structured in a way that not only gets the participant thinking about the issues surrounding climate change, but are also not so taxing that the participant becomes initially discouraged to contribute their opinions.

In order to analyze data from Section II, the City of Rosemount would need to consider what level of resources would be need to be allocated toward interpreting abstract concepts and emerging patterns from responses to open-ended questions. One way to accomplish this would be to consider sampling from local residents located in various sections of the community, leaders in the business community and/or local organizations who might support or partner with the City in promoting the efforts of the RCP.

Goals and Objectives

As the City of Rosemount continues to gather data from other communities engaged in similar ventures, as well as from surveying its constituents, we believe it is essential to remain flexible as new patterns begin to develop. While the established goals explain the overall purpose of the program and guide the direction in which the City conducts its programming activities and generally do not change throughout the program, the objectives should primarily focus on project results and be measurable [2]. Therefore, if and when new patterns begin to develop as the project progresses, there is potential that some objectives may need to be augmented, revised, stricken, or new ones created in order to best serve the learning needs of residents and thus keeping a wider audience engaged.

While the goals are generally broad statements that explain the overall purpose, the objectives are more specific. Additionally, the objectives should remain an imperative part of the programming and be continually examined throughout. Cultivating and refining the objectives should conform to being Specific, Measurable, Attainable, Relevant and Time-bound (SMART) [2]. Should objectives require modification or in some cases eliminated, there should be strong rationale resulting from the compelling patterns that may develop. Additionally, the modifications should be negotiated with the input of any relevant stakeholders thereby promoting an outcome that serves the interests of everyone involved in the program [3]. Therefore, the objectives should remain an integral and valued part of the entire life-cycle of the program as well as reflect the shared vision of key stakeholders who design the climate change program that serves the interests of local residents.

Program Guidelines

In order to provide the City of Rosemount with tools and information necessary in order to implement a climate change education program in the future, we propose the following guidelines as a framework for planning and implementation. This is a loose framework that may be adapted to meet the needs and resources available at such time as the City is interested in creating such a program. It includes core elements of program planning and implementation that appear in similar climate change program plans in cities across the country and may be used as a starting point for the creation of similar programs in Rosemount.

Phase 1: City of Rosemount engages in its own campaign/commitment to reduce energy use by the city.

The City of Rosemount should lead by example by spending the initial stages of the climate change education project focused on making improvements to its own energy use and infrastructure. The City of Rosemount may consider pursuing recognition through a program such as the Environmental Protection Agency's (EPA) Energy Star Certification [4] [5]. Cornell University suggests a number of additional actions that can be taken at the municipal level, such as formally pledging to reduce greenhouse gas emissions, incorporating language related to climate change into the city's comprehensive plans, and installing or purchasing renewable energy sources for use at municipal buildings [6]. Refer to Annex 2 for a list of suggested programs and resources.

Phase 2: Form a committee of community volunteers who will collaborate with the City and spearhead an education and outreach campaign in the community. Pull from multiple sectors and demographics, if possible.

Highly engaged and well-managed volunteer programs have been shown to extend organizational capacity and impact by a considerable degree. Not only are organizations and programs that are supported by volunteers able to expand the reach of their missions, they are able to do so with approximately half of the budget of similar organizations who do not use volunteers [2]. Best practices for recruiting, training, utilizing, and retaining volunteers have been extensively researched and there are many resources available in this area should the City of Rosemount choose to prioritize the execution of a high quality volunteer program. One high-quality resource is the Service Enterprise Initiative [3], a volunteer best-practices training that is sponsored by the Points of Light foundation. It is conducted locally in Minnesota by collaboration between Hands On Twin Cities and the Minnesota Association for Volunteer Administration (MAVA) [7].

The EPA lists the creation of a team that includes both internal and external people to spearhead community efforts as the first step in engaging the community in a climate change action plan [4]. Communities around the country appear to have had great success in engaging committed volunteers to participate and spearhead action. For example, the town of Northfield, Minnesota, used committees of volunteers to conduct research, survey the community, and propose action plans in various areas of sustainability and climate change [8]. The town of Homer, Alaska, used a taskforce to conduct research and make recommendations to the town regarding possible climate change interventions [9].

Phase 3: Create buy-in and sense of urgency related to climate change by recruiting participants to a program in which residents commit to reducing a percentage of their personal energy use over the course of one year.

Programs like this have been utilized in towns and communities across the country, and create buy-in by community members for climate change efforts [10] [11]. They also help to create an engaged community that may be interested in participating in further educational programming related to climate change.

Another option is to engage people on an organization or group level by participating in a program such hosting an Energy Star Competition. The Energy Star program has extensive tools for organizations and governments to use to support this program. From the Energy Star Guide to Energy Efficiency Competitions for Buildings and Plants:

> A competition can inspire participants to reduce their operating costs and their environmental footprint by challenging them to improve their facilities' energy efficiency. Time and time again, leading Energy Star partners have found that a spirit of healthy competition and the opportunity for recognition are among the best drivers for participation in organization- or community-wide energy management [12].

Phase 4: Survey the participants in the energy reduction campaign regarding their motives for participating and their own knowledge of the issue of climate change.

Use this survey to determine the focus of programming throughout the year. After conducting a beta-test survey with a small sample of Rosemount residents, we suggest the following criteria for conducting a survey of this nature:

- A beta-test is suggested to reveal any technical or semantic issues with the survey prior to wider distribution.

- It was helpful to design the survey in two parts; the first with a list of closed-ended questions to prime participants to the topic, and the second with open-ended questions designed to reveal more in-depth information.

- The survey may reveal unanticipated information that changes the focus of your program. Be open to making these changes if necessary.

- Open-ended questions may reveal patterns in individuals' points of view and opinions more effectively than the closed-ended questions.

- Surveys conducted in person are more likely to receive a higher number of responses than those submitted electronically.

- Be sure to communicate that there are no "right" answers, as the purpose of the survey is to obtain individuals' own opinions and ideas.

Our learning from the survey was presented in the RCP Annual Celebration Program on 1 May 2015 at the University of Minnesota (Annexes 3 and 4). Based on our learning from the survey and agreeing with Cervero and Wilson, we suggest that needs assessment process must be conducted as the first step in program planning [13].

Figure 1: Mike Greco (Program Manager) speaking at the RCP Celebration program at the plenary session.

Phase 5: Kickoff events

Partner with different community groups that have elected to join in this program. For example, schools, businesses, and community organizations may each host their own events to generate excitement, educate participants, and set expectations for the program. These groups should be called at the Planning Table, and responsible staff members of the City should be able to negotiate with them democratically [13].

Phase 6: Series of programs

Using data gathered from the initial survey, plan and implement a series of educational programs surrounding climate change and personal energy use. Draw on experts in the community, outside organizations, etc., to provide these programs. We suggest involving content experts towards the end of program planning so that the experts will be able to present program professionally, without compromising people's voices collected through needs assessments [1]. Moreover, partnering with schools, libraries, churches, and other community organizations to host events and rally further support remains strategically important to ensure success of the community education/campaign programs. Refer to Annex 2 for a list of suggested programs and resources.

Conclusion

The City of Rosemount's plan to advance its climate change and climate adaptation initiatives is contingent on the education and engagement of its citizens on these issues. In the coming years, it is critical that the City direct its resources toward community engagement and education in these areas in order for its initiatives to be successful. Caffarella & Daffron argue that preparing and managing program budgets/resources is one of the key components of the planning process [1]. Given the limited resources of the City government in general, Rosemount must be strategic in the deployment of its time and resources.

As such, community surveys and data collection in order to determine a baseline of the populations' level of knowledge of and interest in the topic of climate change is a critical first step. When planning programs, the City should consider survey data and thoughtfully form its learning goals and objectives in order to frame the programs effectively. The experience of other cities suggests that staging competitions between individuals or organizations is an effective way to engage the community around climate change mitigation, and as such the City should consider gathering data about the community's interest in a program like this. Finally, the recruitment and development of highly committed and well-informed volunteers in a strategic, sustainable way will enable the City to deploy its programs at lower cost and with more effective community engagement.

References

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3. Points of Light. *Service Enterprise Initiative*. Available at: http://www.pointsoflight.org/service-enterprise-initiative/about

4. Environmental Protection Agency (EPA). *Engaging Stakeholders.* Available at: http://www.epa.gov/statelocalclimate/local/activities/engaging-stakeholders.html#one

5. Energy Star. *State and Local Governments.* Available at: http://www.energystar.gov/buildings/program-administrators/state-and-local-governments

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10. Victoria Thomson, The Town of Hamden. *Local Action Plan to Reduce Greenhouse Gas Emissions*. August 2004. Available at:

    http://www.hamden.com/filestorage/43/1286/Local_Action_Plan.pdf

11. Erika H. Maher & Courtney Strong, Inc. *Energy and Climate Action Plan for the Town and Villages of Red Hool and Tivoli, NY*. July 2012. Available at:

    http://www.redhook.org/PDFs/CAC/Red%20Hook%20Energy%20&%20Climate%20Action%20Plan%20FINAL.pdf

12. U.S. Environmental Protection Agency (EPA). *Energy Star Guide to Energy Efficiency Competitions for Buildings and Plants.* September 2014. Available at:

    http://www.energystar.gov/sites/default/files/tools/Building%20Competition%20Guide_092514.PDF

13. Ronald M. Cervero and Arthur L. Wilson. *Working the Planning Table: Negotiating Democratically for Adult, Continuing, and Workplace Education*. Jossey-Bass, An Imprint of Wiley, 2005.

Annex 1: Survey Questionnaire

Energy Efficiency & Climate Resiliency
Education and Outreach Project

Please circle the corresponding number to your answer. If you feel the statement does not apply to you, please circle N/A

Section I

1. Climate change is an important issue that demands immediate attention

   Strongly Agree   *Somewhat Agree*   *Disagree*
       5   4   3   2   1   N/A

2. I try to conserve energy by turning off the lights in my home when I am not there

   Strongly Agree   *Somewhat Agree*   *Disagree*
       5   4   3   2   1   N/A

3. I pay close attention to the recycling parameters of my local disposal carrier

   Strongly Agree   *Somewhat Agree*   *Disagree*
       5   4   3   2   1   N/A

4. I make every effort to recycle eligible items for my recycling carrier

   Strongly Agree   *Somewhat Agree*   *Disagree*
       5   4   3   2   1   N/A

5. I feel that my individual efforts make a meaningful and significant contribution to climate change

   Strongly Agree   *Somewhat Agree*   *Disagree*
       5   4   3   2   1   N/A

6. I would consider using non-motorized forms of transportation (i.e. bicycles) at least once or twice per week for work and/or personal

Strongly Agree   *Somewhat Agree*   *Disagree*
     5   4   3   2   1   N/A

Section II *(to be completed by interviewer)*

Briefly describe what you know and understand about climate change

Briefly describe anything (good or bad) you have experienced as a result of climate change

Please explain what things the City of Rosemount can do for you in addressing climate change issues

What things can I do each day to contribute to the climate change/adaptation efforts in my community?

What is your motivation for participating in the climate change program?

Annex 2: Climate Change Resources

1. University of Minnesota has engaged hugely on climate change issues. The following links exemplify some of its works on climate change.
   http://climate.umn.edu/
   http://www.swac.umn.edu/index.htm
   http://www.cidrap.umn.edu/infectious-disease-topics/climate-change
   http://cfc.cfans.umn.edu/forests/research/climate-change
   http://ias.umn.edu/tag/climate-change/
   http://www.math.umn.edu/~mcgehee/Seminars/ClimateChange/index.html
   http://gli.environment.umn.edu/about/work/climate/
   http://www.cura.umn.edu/RCP

2. State of Minnesota has taken some significant initiatives on climate change. Detail information can be found visiting the following web pages and exploring relevant links.
   http://www.health.state.mn.us/divs/climatechange/
   http://www.dnr.state.mn.us/climate/climate_change_info/index.html
   https://www.eqb.state.mn.us/content/climate-change
   http://climatechangemn.org/
   http://www.pca.state.mn.us/index.php/topics/climate-change/regulatory-initiatives-programs-and-policies/minnesota-climate-change-advisory-group.html

3. United States Department of Agriculture (USDA) has established Climate Change Resource Center. It has designed 'Climate Change Education' modules. Please visit the following link for further information.
   http://www.fs.usda.gov/ccrc/

4. National Oceanic and Atmospheric Administration (NOAA) Education Resources provides information on 'Climate Change Impacts' and 'Climate Literacy'. Details can be accessed in the following links.
   http://www.education.noaa.gov/Climate/Climate_Change_Impacts.html
   http://cpo.noaa.gov/OutreachandEducation/ClimateLiteracy.aspx

5. Earth Science Communications Team at California Institute of Technology (CIT) provides climate resources for educators. It is available in the following link.
   http://climate.nasa.gov/resources/education/

6. National Center for Science Education (NCSE) has a comprehensive web page on climate change education.
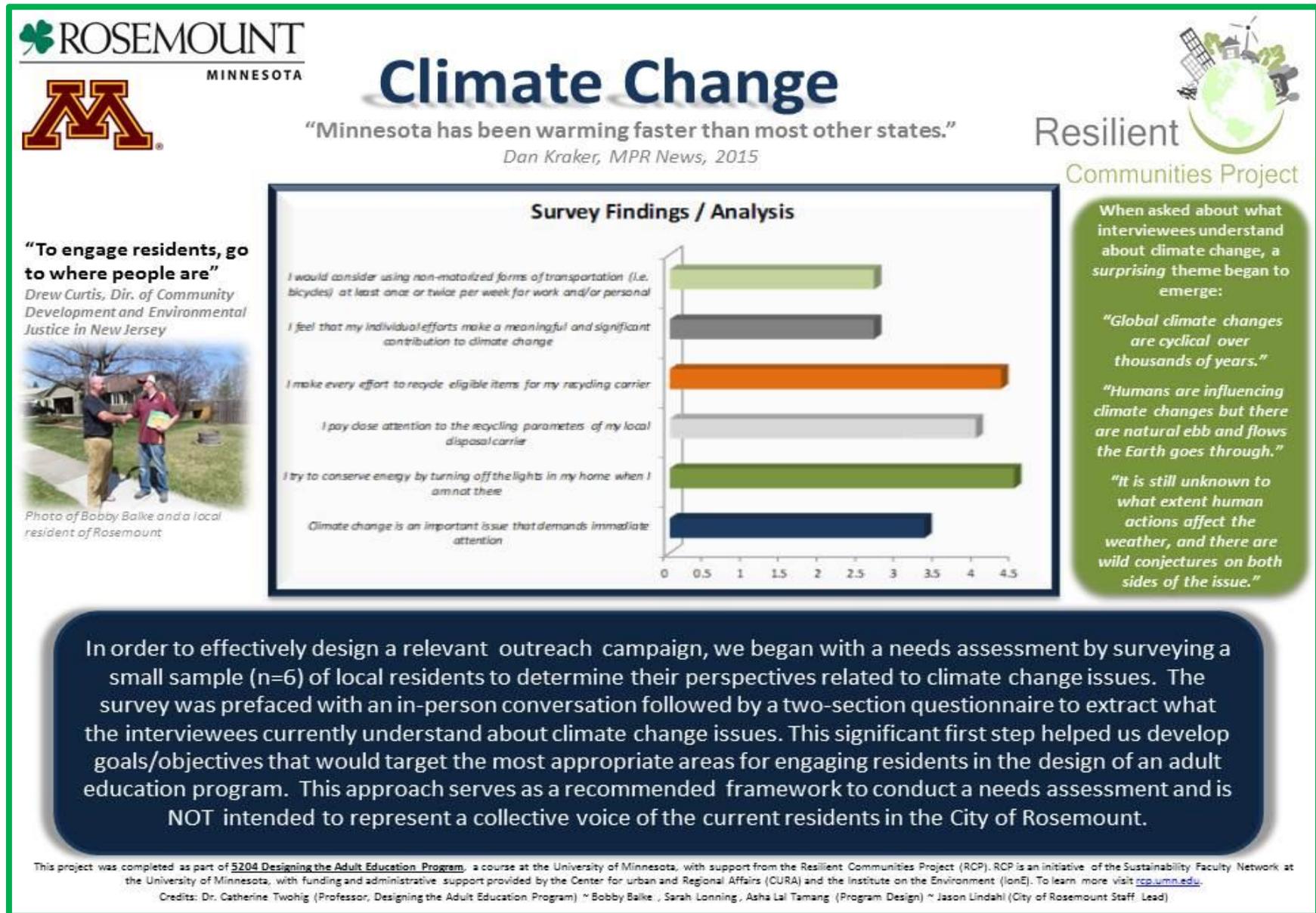   http://ncse.com/climate

7. Department of Ecology of State of Washington provides a number of links on climate change education suitable from kids to scientists.
   http://www.ecy.wa.gov/climatechange/climateEd_resources.htm

8. In 1992, the United Nations (UN) 'Earth Summit' produced the UN Framework Convention on Climate Change. It served as the first global step to address climate change issues. Since then, UN Agencies have done lots of works on climate change. Information on their works is available in the following links.
   http://www.un.org/en/globalissues/climatechange/index.shtml
   http://www.unfpa.org/climate-change
   http://www.unesco.org/new/en/natural-sciences/special-themes/global-climate-change/
   http://www.undp.org/climatechange/
   http://www.unep.org/climatechange/

9. World Environmental Organization (WEO) lists 100 top organizations working in the field of climate change around the globe.
   http://www.world.org/weo/climate

10. International Institute for Environment and Development (IIED) organizes annual conferences in different countries bringing in experiences from different countries on climate change and adaptation. Their 8th conference was held in Nepal last year. Next conference is planned for Nairobi.
   http://www.iied.org/save-date-9th-international-conference-community-based-adaptation-cba9
   http://www.iied.org/climate-change

Annex 4: Poster in Action

<u>Note</u>: RCP Annual Celebration program was held on Friday, 1 May 2015 at the University of Minnesota. The program was highly significant because policy makers; Rosemount City Mayor, Councilors and staffs; academics and students observed poster presentations and participated in discussions. There were 23 poster presentations, followed by a plenary presentation and speeches by key people e.g. the Mayer of Rosemount and the Associate Vice President for Public Engagement, the University of Minnesota.