COMMUNITY HANDBOOK
Strategic Communications for Community Sustainable Development
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Strategic Communications for Community Sustainable Development

Strategic and Applications Guidance for Planning, Design, and Public Administration of Local Communities

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Lincoln, Nebraska
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INTRODUCTION

This handbook is the result of combining the Joslyn Institute for Sustainable Communities’ (JISC) three-year development of guidelines for strategic communications for sustainable communities (supported by a grant from the Nebraska Environmental Trust [NET]), and contract work with the Nebraska Investment Finance Authority (NIFA) to develop a “dashboard of sustainability data” that can be extracted and customized by any individual community, or for external measures of the quality-of-life/sustainability opportunities in given, specific communities.

“For a number of years, NIFA has assisted Nebraska communities in addressing their housing needs through the engagement of a research firm for the production of the annual Profile of Nebraska report. Soon after the 2013 report was made available, NIFA took this availability of data to a new and higher level. With the roll out of the Nebraska Dashboard, NIFA now provides communities with an even greater ability to make use of Profile of Nebraska data. The Nebraska Dashboard, a web-based interface, allows users to access not only information in the current Profile of Nebraska, but also historical data from ten prior years of Profile of Nebraska reports.”

The Profile of Nebraska report provides current, high-quality, relevant data about economic and demographic factors influencing the development, production, use, and need for housing in individual communities throughout the state. The profile currently highlights data profiles of 31 Nebraska communities.

Following three years of use of the dashboard, NIFA is now interested in expanding the scope of the dashboard to include additional measurable data concerning future and existing conditions of community sustainability, or, in other words “conditions of community quality-of-life (QOL)”.

1 The Profile of Nebraska, Western Economic Services, LLC, Portland, Oregon

2 NCSHA 2013 Annual Awards Application, NIFA
JISC has utilized its proprietary system of Sustainometrics™ to investigate the expansion of the NIFA Dashboard with measurable data, and recommended collection processes of data, in the domains of community conditions of Environment, Socio-cultural, Technologies, Economics, and Public Policy (EcoSTEP®). And, further, JISC outlines a strategy for blending these metrics with the existing data sets contained in the annual *Profile of Nebraska*, for a more comprehensive community assessment tool.

Parallel to the contract work for NIFA, the original NET proposal stated a special need for a format of strategic communications that could be applied in the planning, design and/or administration of communities seeking higher profiles of sustainable development:

“Each problem-opportunity in the quest for sustainability is a local matter and, thus, requires a distinctive understanding of what will work in a particular place at a particular time. This capacity is built up in certain forms of deliberative and democratic communication that increases understanding, facilitates democratic skills and fosters positive community attitudes.”

The NET proposal further proposed a three-community case-study as the means to develop a model framework for on-the-ground applications of workable communications as a goal of the research:

“To work with community partners (in Minden, Broken Bow, and Lincoln) to establish a framework for fostering appropriate, targeted and local communication strategies to address their specific problem and opportunities. The result will be robust, innovative practices that drastically increase a decision-making capacity on sustainability issues in a given community.”

“Concern with preserving and enhancing quality of life has stimulated the development of indicators beyond the traditional economic numbers to try to measure a broader concept of quality of life. Many communities around the country have explored the usefulness of expanded indicators of well-being.”³

More than 20 years of research and studies on the attributes of sustainable communities by the JISC provides clear evidence that high quality-of-life and sustainable environments

require: a.) good planning for optimum interdependencies among the environmental, socio-cultural, technologies, economics, and public policy domains; b.) sensitive design for the conservation of eco-systems and natural resources; and c.) intelligent, sustainability committed leadership, using good strategic communications for public administration.

The amalgamation of these two studies, the NET grant and the NIFA contract, provided a unique opportunity to advance key related methodologies for the process of collecting and maintaining sustainability data, and concurrently, establishing a universal framework for strategic communications among and between citizens, planners, designers, and public officials.

Three key JISC core-values underlie this handbook:

- How will leaders know whether visions, goals, and strategies are leading to long-term sustainability progress or regression? — the importance of metrics

- Sustainability requires the attention and engagement of the people who live in the community or region in which a problem-opportunity is being addressed. — the importance of stakeholder strategies

- Identify the range of required messages in a campaign of Community Development for Sustainability; study external urban and community models (local, regional, national and international). — the importance of research, evaluation and communications

**RECOMMENDATIONS**

**Strategic Communications**

Previous projects developed by the Joslyn Institute for Sustainable Communities have established the need and process for educating communities about sustainable development, first through the enrichment of sustainability leadership at the local level, and, most recently, through the articulation of resources unique to and critical for the well-being of Nebraska: Food, Water, Land, Energy, and Materials. Additionally, the Institute has repeatedly demonstrated the necessity for communication, both in a call for regional collaboration and in
the belief that dialogue among citizens is a critical first step for addressing any sustainability issue.5

The suggestion that communication is or should be “strategic” adds another dimension to this previous work. Strategic communication suggests something beyond a dialogic approach that is useful for gaining understanding of topics and perspectives. Our definition of communication is inclusive of notions of dialogue, but strategic communication also suggests the intentional, deliberate and purposeful crafting of communication toward particular outcomes.

Our approach was to draw from communication theories and practices from the social sciences in order to apply a communication approach to these collaborations. We repeatedly turned to the knowledge available from several intellectual traditions, all of which are interested in the everyday use of communication. By this we mean that the communication approaches employed for this project are theoretical in nature because of their history in empirical research, but also practical and applied in the way they focus attention to the everyday practices of people and in communities. Below, we offer a brief synopsis of each field of communication study that influenced our thinking, and add remarks on the practical implications of each in our projects and the development of our framework.

**Cultural Communication**

Cultural Communication is the general term we use to describe a body of scholarship including the Ethnography of Communication, Speech Codes Theory, and Cultural Discourse Analysis. Taken together, these traditions highlight that communication is always culturally influenced and that wherever there is a unique culture, there are unique ways of speaking. The perspectives in this tradition reminded us that while many Nebraska communities share the same concerns and are, perhaps, suffering from some of the same environmental, economic and social difficulties, inquiry in each community must recognize that local identities, communication practices, and social relationships are unique. Moreover, these traditions provided guidance in our modes of inquiry because of their respective articulations of ethnographic methods and practices for the study of local terms, meanings, beliefs, and social norms.

Communication Design

Communication Design is a relatively new field developed first in the study of digital technology design but more recently applied to face-to-face interactions. The perspective takes for granted that all people are engaged in the design of communication in our everyday lives. For example, we plan and strategize for meetings, interpersonal interactions, job interviews, and the like. Communication Design foregrounds the intensive interest people have in the shaping of communication toward productive ends. What is unique about the perspective is simply the attention to the study of this interest. Additionally, communication design tries to understand how individuals or groups attempt to make possible forms of communication that seemed impossible or unimaginable. Communication design concepts were useful when working with our partners to strategize the design of communication interactions for furthering the projects.

Deliberative Democracy

Deliberative Democracy is both a tradition theorizing and improving the practice of democracy, particularly in the United States, and is a generally used term to describe a continually growing consortium of scholars and practitioners interested in enhancing and creating opportunities for citizens to engage in a more democratic political process. On the one hand, this body of scholarship reminds us to be mindful of principles important to citizen involvement in decision-making such as inclusion, equity, and transparency. On the other hand, it provides perspective and examples for the practice of deliberation among citizens in an effort to improve the quality of decisions. Our reference to deliberative democracy includes work in academia, but also organizations such as The Kettering Foundation (www.kettering.org), which facilitates the practice of deliberative democracy in everyday life. We referenced Kettering’s simple, yet elegant, model in the development of our project. The model asks practitioners of deliberative democracy to view it in three interrelated but distinctive sets of questions that can be labeled: Naming, Framing, and Choice-Making. In short, how do citizens name a problem, and is it the right name? How does the name affect attitudes toward the problem? How is the problem framed in terms of shared or competing values and beliefs? And, finally, what are the options on the table for addressing the problem and how should citizens make the choice?
Local Strategies Research

Local Strategies Research is a perspective that has roots in the Ethnography of Communication but moves from inquiry for description to inquiry-in-action. Recently, local strategies research has been applied in healthcare, digital design, and community planning. In each domain, the purpose is to appropriately and artfully design an intervention, some change in the present circumstances toward something new, to improve local conditions. We interpret local strategies research as raising the following questions for those who seek change in a community: What would someone need to know about a community, culturally and communicatively, in order to intervene toward some social betterment (in this case toward sustainable development)? And how would that knowledge shape the intervention to make it more effective? Thus, local strategies research in communication reaffirmed our commitment to learn deeply about our communities before presuming to be able to improve them. It places a burden on projects like ours by forcing development of local knowledge and, then, from this knowledge, applying principles of sustainability such that a given intervention will fit and flourish in that context.

In the context of our parallel studies with the case-study communities of Minden, Broken Bow and Lincoln, and the NIFA Dashboard display of 31 Nebraska communities, the EcoSTEP recommendations for 20 Indicators of Quality-of-Life constitute a valuable reference of local data and strategies for any community seeking a high quality sustainable condition.

FRAMEWORK FOR STRATEGIC COMMUNICATIONS

The principal questions for planners and civic leaders intending to guide community conditions toward a path of sustainable development are: Where, how, and when is it most effective to communicate with the citizens of a community about their value and life style choices and how their choices impact the sustainability of their community in the future? How do we as citizens in a democratic society come to understand (and love) the necessity of balancing the requirements of the natural systems, socio-cultural values, human technology, trade and commerce, and governmental regula-
tions and policies necessary for true conservation to occur? How can we best grasp the complexity of a particular problem and the trade-offs implicit in the options available so that the best choice can be made? And, how will leaders know whether visions, goals, and strategies are leading to long-term progress or regression?⁶

This framework is developed through data-driven observation, through intensive discussion with our collaborators, and application to the complex set of problem-opportunities we encountered in three Nebraska communities—Minden, Broken Bow, and Lincoln.

Component I: Crafting Problem-Opportunity

The following questions provide the communicative basis for talking about the problem-opportunity not only for definitional purposes, but for articulating values and, ultimately, making choices for solutions.

- What is the name of the problem?
- How is it a sustainability problem-opportunity from a local perspective?
- If the problem opportunity is not perceived as a matter of sustainability, what resources can be brought to bear to demonstrate the interrelated economic, environmental, socio-cultural, technological, and public policy dimensions of the problem-opportunity?
- What interactions can be designed in order to engage local notions of the problem-opportunity with the construct of sustainability?
- If people use different names for the problem-opportunity, what are the values and practices that each name suggests?
- How does this problem-opportunity fit within a broader range of shared concerns within the community?
- Is there a way to articulate this problem-opportunity as interrelated with these concerns?

Component II: Discovering Local Socio-Cultural Beliefs and Practices

The following questions help develop an understanding of culturally, locally specific nature of the problem-opportunity while also situating it in a broader understanding of everyday life of the community.

⁶ 2013 NET Proposal, JISC
• Which individuals, groups, networks, and/or organizations, public and private, are associated with the problem-opportunity?
• How do discussions of the problem-opportunity connect or separate particular people in the community?
• What terms are used to reference these distinctions?
• What relationships exist that are associated with the problem-opportunity?
• In particular, what conflicts are talked about when the problem-opportunity is a topic of communication?
• What stories are told about the problem-opportunity that help illumine terms and meanings, practices, beliefs?
• What events in the history of the community are exemplary of the kind of problem-opportunity being faced at present?

Component III: Fostering Local Democratic Capacity

The following questions focus consideration for those interested in creating change on the capacity in the community to foster such change. Capacity is a much more complicated matter than communicative concerns. Here, however, these questions focus on the communicative dimension. Additionally, we raise here the question of who initiates the movement toward sustainable conditions.

• Whom or what is the catalyst for exploring the problem-opportunity?
• Who can claim ownership of the problem-opportunity?
• If no one, how can commitment be fostered among many people, groups, or coalitions to claim ownership?
• Are there a sufficient number of people who are at the nexus of the problem-opportunity, motivation for change, and resources for change?
• Who will be profoundly affected by the changes realized in addressing the problem-opportunity? How can their direct or representative participation in the process be improved?
• Who will be marginally affected by the changes realized in addressing the problem-opportunity? How can their direct or representative participation in the process be improved?
• Who will be minimally affected by the changes realized in addressing the problem-opportunity? What provisions have been made to make sure their interests will be considered?
• Who has the ethos to convene various iterations of groups for the purpose of discussing
the problem-opportunity? Is the answer a combination of local residents (drawing on important social relationships) and outside consultants (drawing on topical expertise)?

- Who has the skills to facilitate conversation toward productive ends?
- Who has the skills to moderate conflict toward productive ends?
- How will the groups or coalitions adapt to inevitable and unavoidable changes in membership and leadership?

Component IV: Crafting Communication Interventions Toward Sustainable Conditions

The following questions focus attention toward creative communication production, what is referred to above as intentional communication design.

- What communication interventions can be put into practice in order to create a productive understanding of the problem and long-term change to affect conditions toward sustainability?
- How can communication interventions and sustainable conditions be jointly improved for progress toward community betterment?
- How can communication interventions and sustainable conditions be jointly monitored for progress toward community betterment?
- What are the ways to craft messaging about the problem as an opportunity that simultaneously address the Five Domains of Sustainability: Environment, Economics, Socio-Cultural, Technology, and Public Policy?

Community Narrative

In order to supplement the framework articulated above, a community narrative for each collaboration should be formed. The narrative can be formed by focusing attention on key moments of understanding, among collaborators. The narratives do not articulate the whole of the sustainability projects, but instead demonstrate the attention needed to crucial points about the local nature of communication and sustainability. In each narrative, answering the questions above, either as consultants, or in local partnerships creates the conditions to address some component of the problem-opportunity and move the community toward more sustainable conditions.
RESOURCES FOR LOCAL STRATEGIES RESEARCH

The contract work with NIFA for expansion of a quality-of-life data system for their Dashboard led to an investigation of the QOL measurements experiences of five prominent national communities with prior, specific, and on-going metrics programs: Jacksonville, Florida; Seattle, Washington; Austin, Texas; Berkeley, California, and Colorado Springs, Colorado.

Additionally, JISC has investigated QOL and Sustainability measurement indicators for eleven other midsize Midland cities with similar conditions to the 31 profiled Nebraska communities. (See Appendix Part F, Page 39, for documentation of the Five Domain metrics employed by each of these five communities; plus the documentation of indicators currently employed by the following Midlands communities: Milwaukee, Wisconsin; Madison, WI; Minneapolis, Minnesota; St. Paul, Minnesota; Salt Lake City, Utah; West Valley City, UT; Las Cruces, New Mexico; Albuquerque, NM; Birmingham, Alabama; Montgomery, AL; Sioux Falls, South Dakota; and Rapid City, South Dakota)

JISC Recommends the following specific, measurable community sustainability indicators, for Nebraska communities, in the five domains of Environment, Socio-Cultural, Technologies, Economics, and Public Policy, to be used annually as baseline data collection headings in the Nebraska Profile, or otherwise known as the NIFA Dashboard: (See EcoSTEP® diagram, page 13)

Environment
- Quantity of waste diversion from landfills
- Water conservation and quality
- Storm water system
- Green building construction

Socio-cultural
- High school graduates
- College graduates
- Public events in cultural arts
- Community gardens for local food
Technology
- Mean travel time, home to work
- Bike lanes and trails
- Public transit
- Alternative energy systems

Economic
- Household income
- Population
- School population
- Unemployment

Public Policy
- Workforce and affordable housing
- Up-to-date Comprehensive Plan
- Energy plan
- Natural Resources Districts/Communities relationships

(Note: These sustainability indicators are draft-only, and exact definitions of the Five Domain metrics are yet to be determined. At the time of publication of this handbook, the method and frequency of updates to the JISC EcoSTEP® Indicators had not been determined.)
APPENDIX
Link to Nebraska Profile/NIFA Dashboard: http://www.westernes.com/Nebraska/

Link to Sustainometrics™ for selected Nebraska cities in the existing Nebraska Profile: http://www.westernes.com/Nebraska/
While many cities saw positive growth rates through 2014, it was the state’s two most populous cities, Omaha and Lincoln, which saw the most significant increases in total population: 37,641 and 14,617 persons, respectively. Each of the 31 cities’ population change from the 2010 Census to the 2014 current estimate is presented in Table A, below, ranked in order of absolute change.

### Table A
**Population Change by County**
2010 Decennial Census through July 1, 2014

<table>
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<tr>
<th>Area</th>
<th>Change</th>
<th>Area</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Omaha</td>
<td>37,641</td>
<td>Holdrege</td>
<td>13</td>
</tr>
<tr>
<td>Lincoln</td>
<td>14,617</td>
<td>Hastings</td>
<td>8</td>
</tr>
<tr>
<td>Papillion</td>
<td>4,376</td>
<td>South Sioux City</td>
<td>7</td>
</tr>
<tr>
<td>Bellevue</td>
<td>3,799</td>
<td>Blair</td>
<td>–4</td>
</tr>
<tr>
<td>Grand Island</td>
<td>2,716</td>
<td>Plattsmouth</td>
<td>–15</td>
</tr>
<tr>
<td>La Vista</td>
<td>1,878</td>
<td>Nebraska City</td>
<td>–24</td>
</tr>
<tr>
<td>Kearney</td>
<td>1,682</td>
<td>Schuyler</td>
<td>–42</td>
</tr>
<tr>
<td>Ralston</td>
<td>1,273</td>
<td>Wayne</td>
<td>–83</td>
</tr>
<tr>
<td>Columbus</td>
<td>519</td>
<td>Chadron</td>
<td>–84</td>
</tr>
<tr>
<td>Norfolk</td>
<td>234</td>
<td>Lexington</td>
<td>–84</td>
</tr>
<tr>
<td>York</td>
<td>191</td>
<td>McCook</td>
<td>–87</td>
</tr>
<tr>
<td>Seward</td>
<td>164</td>
<td>Gering</td>
<td>–128</td>
</tr>
<tr>
<td>Sidney</td>
<td>157</td>
<td>Scottsbluff</td>
<td>–164</td>
</tr>
<tr>
<td>Fremont</td>
<td>103</td>
<td>Beatrice</td>
<td>–404</td>
</tr>
<tr>
<td>Crete</td>
<td>74</td>
<td>North Platte</td>
<td>–406</td>
</tr>
<tr>
<td>Alliance</td>
<td>28</td>
<td>Nebraska</td>
<td>67,955</td>
</tr>
</tbody>
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Housing

Housing production in Nebraska, as indicated by new construction building permits, was relatively strong during the previous decade, reaching 9,929 units in 2005. The issuance of building permits slowed during 2006, 2007, and 2008, with a total of 8,230, 7,604, and 6,346 units permitted, respectively. In 2011, permitted units continued to decline, with only 5,203 units permitted statewide. However, this number increased sharply to 7,543 units in 2013, and increased further in 2014, rising to 7,605. Permits in these 31 cities in 2014 accounted for 77.9 percent of Nebraska’s total permitted new residential construction. Additionally permitted construction was more concentrated in the two most populous cities, Omaha and Lincoln. However, only Lincoln city saw an increase in permits from 2013. …Lincoln city and Omaha comprised 55.8 percent of all of Nebraska’s permitted units in 2014. Although permit activity increased statewide, 18 out of the 31 cities, or 58.1 percent, saw a decrease in permitting activity.


1 No corrections have been made to account for any annexations that may have occurred over this period, thereby potentially increasing permits more than might have been observed without annexation.
The Five Domains* of Sustainability in the Built Environment


If the public/private sectors are to have a reasonable chance of managing the growth of communities and the quality of the urban habitat, and at the same time achieve a balance of economic development with the conservation of the earth’s natural systems, we must expand our definition of the principles of sustainability. We must see the problems in a whole-systems context, rather than in a one-dimensional, single-issue context that is historically driven by economics.

During the first official recognition of the concept of Sustainable Development by the United Nations’ Bruntland Commission (World Commission on Environment and Development, 1987), it was stated that a principle of sustainable development was necessary to protect the natural systems of the earth, and that the principle should “...ensure that development meets the needs of the present without compromising the ability of future generations to meet their own needs.” Since the beginning of the concept and the subsequent studies on implementation, sustainable development has consistently been represented as having three domains – the environment, economics, and the social context – and, that they must be treated interdependently for a sustainable balance to occur. Many business and governmental leaders have been skeptical about placing any domain on a par with economics. Even those who, sooner or later, will adopt the values of living in balance with nature often find the tools and the reach within these three domains to be limited.

The limitations in achieving real sustainability exist whether the scale of the development is at the micro level (such as an individual building or neighborhood), or at the macro scale of habitat (such as a city or a region of urban and community habitats). The designer, the planner, the developer, the civic official, or the NGO leader who is genuinely interested in facilitating a sustainable solution in the urban context will not find all the networks or ingredients, or all the information, or all the tools and alternatives for solutions within only these three domains.

Therefore, on the basis of these and other examples of our continuing and widening gulf of separation between human systems and natural systems, the Joslyn Institute has developed project evidence that the Five Domains of Sustainability, for humanity, bio/eco-systems, communities, and the earth are:

• Environmental (natural and man-built),

• Socio-cultural (history, conditions, and contexts),

• Technological (appropriate, sustainable),

*“Domain” in this context is used to mean: “…a field of human activity, with similar features, information or concerns.”
- Economics (the production of goods and services within a sustainable context, and the financial resources to support the production, trade, operations, and maintenance),

- Public Policy (government, or public rules/regulations) (see diagram below)

Further, in the city of the future these domains should be the organizing principles for urban administration, urban design and planning, urban growth management, and regional and urban sustainable development. The domains, and all the information contained within them, are interdependent, interactive, and affective, one in turn upon each of the other four. A systematic analysis of their interdependencies, in any developmental or operational situation, will reduce the potential of unintended, unanticipated consequences, at any scale of development.

Joslyn Institute for Sustainable Communities, 2003–2006
Sustainometrics™
Using the EcoSTEP™ Tool to Measure Sustainability in Design, Planning, and Public Administration

- Interdependencies of the Five Domains

- Essential Characteristics
  - Five Domains
  - Interdependencies
  - Values to support a particular context
  - Measurable indicators within each Domain—measurable in mathematical terms, common sustainable sources of data, replicable over time
  - Goal of sustainability for each indicator
  - Dynamic of changing time frames—short, medium, long
  - Severity scale of future action is noted for greatest impact on the sustainability of the context for each domain within each time frame
  - Relative importance of a priority for action is noted for each domain within each time frame
  - Plotted distance from a sustainable condition for each indicator, within each time frame
  - Interdependencies and interaction among and between all indicators are noted (electronic gaming)
  - Severity scale of future action is noted for greatest impact on the sustainability of the context, for each indicator within each time frame
  - Relative importance of a priority for action is noted for each indicator within each time frame

- Project or Place Sustainability / Values and Priorities

- The Five Domains

- Indicators

- Values and Priorities
The juxtaposition of our engagement with three communities in Nebraska provides the basis for articulating a Framework for Strategic Communication Toward Sustainable Development. The unique nature of this project was in the comparative effort and analysis across three distinctive communities, each of which was addressing a distinctive problem-opportunity of sustainability. As was stated in the original proposal,

“Each problem-opportunity in the quest for sustainability is a local matter and, thus, requires a distinctive understanding of what will work in a particular place at a particular time. This capacity is built up in certain forms of deliberative and democratic communication that increases understanding, facilitates democratic skills and fosters positive community attitudes.”

This foundational set of assumptions emphasizes that sustainable development is always a local matter. But to suggest that sustainable development is always local does not also suggest that there is not an opportunity for the development of an approach or set of approaches that afford any given community tools and resources for addressing a problem-opportunity from a sustainability perspective. The original proposal further states that our goal was

“To work with community partners to establish a framework for fostering appropriate, targeted and local communication strategies to address their specific problem and opportunities. The result will be robust, innovative practices that drastically increase a decision-making capacity on sustainability issues in a given community.”

Thus, our project includes not only the investigation and development of strategic communication in each community, and the resulting progress each community made toward sustainable development, but also the synthesis of collective knowledge gained across three communities in order to provide a resource for other communities in their own quest for sustainable development.
Strategic Communication: Inquiry, Design, Intervention

Previous projects developed by the Joslyn Institute for Sustainable Communities have established the need and process for educating communities about sustainable development, first through the enrichment of sustainability leadership at the local level, and, most recently, through the articulation of resources unique to and critical for the well-being of Nebraska: Food, Water, Land, Energy, and Materials. Additionally, the Institute has repeatedly demonstrated the necessity for communication, both in a call for regional collaboration and in the belief that dialogue among citizens is a critical first step for addressing any sustainability issue.

The suggestion that communication is or should be “strategic” adds another dimension to this previous work. Strategic communication suggests something beyond a dialogic approach that is useful for gaining understanding of topics and perspectives. Our definition of communication is inclusive of notions of dialogue, but strategic communication also suggests the intentional, deliberate and purposeful crafting of communication toward particular outcomes.

Our approach was to draw from communication theories and practices from the social sciences in order to apply a communication approach to these collaborations. We repeatedly turned to the knowledge available from several intellectual traditions, all of which are interested in the everyday use of communication. By this we mean that the communication approaches employed for this project are theoretical in nature because of their history in empirical research, but also practical and applied in the way they focus attention to the everyday practices of people and in communities. Below, we offer a brief synopsis of each field of communication study that influenced our thinking, and add remarks on the practical implications of each in our projects and the development of our framework.

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Cultural Communication is the general term we use to describe a body of scholarship including the Ethnography of Communication, Speech Codes Theory, and Cultural Discourse Analysis. Taken together, these traditions highlight that communication is always culturally influenced and that wherever there is a unique culture, there are unique ways of speaking. The perspectives in this tradition reminded us that while many Nebraska communities share the same concerns and are, perhaps, suffering from some of the same environmental, economic and social difficulties, inquiry in each community must recognize that local identities, communication practices, and social relationships are unique. Moreover, these traditions provided guidance in our modes of inquiry because of their respective articulations of ethnographic methods and practices for the study of local terms, meanings, beliefs, and social norms.
Communication Design

Communication Design is a relatively new field developed first in the study of digital technology design but more recently applied to face-to-face interactions. The perspective takes for granted that all people are engaged in the design of communication in our everyday lives. For example, we plan and strategize for meetings, interpersonal interactions, job interviews, and the like. Communication design foregrounds the intensive interest people have in the shaping of communication toward productive ends. What is unique about the perspective is simply the attention to the study of this interest. Additionally, communication design tries to understand how individuals or groups attempt to make possible forms of communication that seemed impossible or unimaginable. Communication design concepts were useful when working with our partners to strategize the design of communication interactions for furthering the projects.

Deliberative Democracy

Deliberative Democracy is both a tradition theorizing and improving the practice of democracy, particularly in the United States, and is a generally used term to describe a continually growing consortium of scholars and practitioners interested in enhancing and creating opportunities for citizens to engage in a more democratic political process. On the one hand, this body of scholarship reminds us to be mindful of principles important to citizen involvement in decision-making such as inclusion, equity, and transparency. On the other hand, it provides perspective and examples for the practice of deliberation among citizens in an effort to improve the quality of decisions. Our reference to deliberative democracy includes work in academia, but also organizations such as The Kettering Foundation (www.kettering.org), which facilitates the practice of deliberative democracy in everyday life. We referenced Kettering’s simple, yet elegant, model in the development of our project. The model asks practitioners of deliberative democracy to view it in three interrelated but distinctive sets of questions that can be labeled: Naming, Framing, and Choice-Making. In short, how do citizens name a problem, and is it the right name? How does the name affect attitudes toward the problem? How is the problem framed in terms of shared or competing values and beliefs? And, finally, what are the options on the table for addressing the problem and how should citizens make the choice?

Local Strategies Research

Local Strategies Research is a perspective that has roots in the Ethnography of Communication but moves from inquiry for description to inquiry-in-action. Recently, local strategies research has been applied in healthcare, digital design, and community planning. In each domain, the purpose is to appropriately and artfully design an intervention, some change in the present circumstances toward something new, to improve local conditions. We interpret local strategies research as raising the following questions for those who seek change in a community: What would someone need to know about a community, culturally and communicatively, in order to intervene toward some social betterment (in this case toward sustainable devel-
opment)? And how would that knowledge shape the intervention to make it more effective? Thus, local strategies research in communication reaffirmed our commitment to learn deeply about our communities before presuming to be able to improve them. It places a burden on projects like ours by forcing development of local knowledge and, then, from this knowledge, applying principles of sustainability such that a given intervention will fit and flourish in that context.

Taken together, these communication fields of study provided both the foundation our inquiry and our development of communication practices with our collaborators. They provided the resources and tools necessary for asking and listening, co-creating, participating, facilitating, convening, and problem-solving. More importantly, they provide the foundation for our articulation of strategic communication that can be employed and deployed by community leaders seeking solutions toward sustainable development.

Summary of Work

Our quarterly reports provide detailed accounts of the work plan as it was articulated in the proposal and carried forth in the project. Here, we only briefly summarize the work of the project in order to provide background for the remainder of the report. We began the project by convening an advisory session of community leaders from across the state. These community leaders were identified through contacting partners from previous Joslyn Institute projects including the Nebraska Sustainability Leadership Workshops (NSLW) and the Conversations Conferences on Nebraska Environment and Sustainability (CCNES). In that session, we were persuaded to narrow our conceptualization of “community” to entities within municipalities that could functionally speak about and garner the resources for addressing particular problem-opportunities. This important point will be re-emphasized in the development of the framework, but briefly we found it useful to narrow our view of community to organizations or networks of people who are able to represent community concerns on a particular problem-opportunity. Often, notions of community are too loosely defined for making progress toward some goal.

Through a variety of professional contacts, two of which were developed through previous Joslyn Institute projects, we developed collaborations with three groups in each of three communities to explore the possibility of partnering. Below, each will be elaborated. Briefly, these were:
Over the next several months, and in partnership with collaborating organizations, we developed our projects in three general phases. First, drawing from social scientific methods and practices within the expertise of our team, we engaged in an investigation of the local problem-opportunities. Each circumstance warranted unique approaches, but all were directed at discovering local understandings, meanings, terms, practices, and narratives that were crucial for interpreting and describing the problem-opportunities of each case.

Second, we developed a variety of communication and interaction modes and events, facilitating opportunities for the local stakeholders to come to terms with their concerns and begin to articulate them from a sustainability perspective. During this phase, we employed established sustainability frameworks and tools to guide discussion with our collaborators. These included The Institutes’ unique Five Domain model of sustainability and newly published concepts and practices developed in *Sustainometrics: Measuring Sustainability*.

Third, working with our partners, we continued to design and develop occasions for community discussion that were focused on the generation of solutions to address the local problem-opportunities.

This brief description of phases captures the tenor of our work in Strategic Communication Design in each community, but it is critical to emphasize that each community was radically distinctive in the nature of the problem-opportunity being addressed, the configuration and networks of people who came together to address the problem-opportunity, the levels of citizen engagement, the citizen capacity for engaging in choice-making, the local commitment to remain focused on addressing the problem-opportunity, and the success or productive outcomes that resulted.
Framework for Strategic Communication Toward Sustainable Development

In what follows, we outline the framework for strategic communication we hope will be a resource for communities, meaning particular sustainability leaders in particular communities, to deploy when presented with a problem-opportunity that can be leveraged toward more sustainable development. After a description and outline of the framework, we provide brief narratives of each case that illustrate the utility of the framework and offer evidentiary support for our findings. Our original proposal offered the following text as a departure point for this project:

“The principal questions for planners and civic leaders intending to guide community conditions toward a path of sustainable development are: Where, how, and when is it most effective to communicate with the citizens of a community about their value and life style choices and how their choices impact the sustainability of their community in the future? How do we as citizens in a democratic society come to understand (and love) the necessity of balancing the requirements of the natural systems, socio-cultural values, human technology, trade and commerce, and governmental regulations and policies necessary for true conservation to occur? How can we best grasp the complexity of a particular problem and the trade-offs implicit in the options available so that the best choice can be made? And, how will leaders know whether visions, goals, and strategies are leading to long-term progress or regression?”

Our framework is an elaboration of the sentiment expressed in our proposal. The framework is developed through data-driven observation, through intensive discussion with our collaborations, and application to the complex set of problem-opportunities we encountered in three communities.

We present a Framework for Strategic Communication Toward Sustainable Development as a series of interrelated and somewhat sequential components and questions. Our framework privileges brevity, in part because it is our belief that to be useful to and effective for practitioners, it must not be overly complex. It is, however, powerful in directing its user toward productive development toward a communication strategy. In no way are we suggesting a linear progression or prescription that can be simply applied to a problem-opportunity. On the contrary, we are proposing a means of inquiry and discovery that will foster the productive circumstances for communities to engage in decision-making toward more sustainable conditions. In some of the steps and questions, there are direct references to communication concepts developed from the fields of study briefly outlined above. In others, we offer questions that seem to capture the essence of critical moments in all three of our projects. Finally, in some, we offer questions that were central to unlocking a key component of one of the cases, but we feel compelled to include it because it was so critical and would likely be critical for another community deploying our framework.
The framework presumes that some basic requirements and resources are in order for a sustainability leader in a community to use it toward sustainable development. Minimally, these would include a person or network of persons with the resources to address the problem on a community scale. There would also need to be a minimal level of general agreement that there is a problem-opportunity to address and that the problem-opportunity is one that can be approached from a sustainability perspective. Some of these requirements and resources are topically included in the framework.

Finally, our project highlights an important difference between the application of the framework when one approaches a community as a consultant, someone who is not native to or a resident in a community, and the application of the framework by someone who is already a member of the community engaging in the process of attempting to create more sustainable conditions. We suggest the framework as a guiding heuristic to be modified by the user to fit her or his social relationships in and knowledge of a given community.

**Component I: Crafting Problem-Opportunity**

The following questions provide the communicative basis for talking about the problem-opportunity not only for definitional purposes, but for articulating values and, ultimately, making choices for solutions.

- What is the name of the problem?
- How is it a sustainability problem-opportunity from a local perspective?
- If the problem opportunity is not perceived as a matter of sustainability, what resources can be brought to bear to demonstrate the interrelated economic, environmental, socio-cultural, technological, and public policy dimensions of the problem?
- What interactions can be designed in order to engage local notions of the problem with the construct of sustainability?
- If people use different names for the problem, what are the values and practices that each name suggests?
- How does this problem-opportunity fit within a broader range of shared concerns within the community?
- Is there a way to articulate this problem opportunity as interrelated with these other concerns?

**Component II: Discovering Local Socio-Cultural Beliefs and Practices**

The following questions help develop an understanding of culturally, locally specific nature of the problem-opportunity while also situating it in a broader understanding of everyday life of the community.

- Which individuals, groups, networks, and/or organizations, public and private, are associated with the problem-opportunity?
- How do discussions of the problem-opportunity connect or separate particular people in the community?
Component III: Fostering Local Democratic Capacity

The following questions focus consideration for those interested in creating change on the capacity in the community to foster such change. Capacity is a much more complicated matter than communicative concerns. Here, however, these questions focus on the communicative dimension. Additionally, we raise here the question of who initiates the movement toward sustainable conditions.

- Whom or what is the catalyst for exploring the problem-opportunity?
- Who can claim ownership of the problem-opportunity?
- If no one, how can commitment be fostered among many people, groups, or coalitions to claim ownership?
- Are there a sufficient number of people who are at the nexus of the problem-opportunity, motivation for change, and resources for change?
- Who will be profoundly affected by the changes realized in addressing the problem-opportunity? How can their direct or representative participation in the process be improved?
- Who will be marginally affected by the changes realized in addressing the problem-opportunity? How can their direct or representative participation in the process be improved?
- Who will be minimally affected by the changes realized in addressing the problem-opportunity? What provisions have been made to make sure their interests will be considered?
- Who has the ethos to convene various iterations of groups for the purpose of discussing the problem-opportunity? Is the answer a combination of local residents (drawing on important social relationships) and outside consultants (drawing on topical expertise)?
- Who has the skills to facilitate conversation toward productive ends?
- Who has the skills to moderate conflict toward productive ends?
- How will the groups or coalitions adapt to inevitable and unavoidable changes in membership and leadership?

Component IV: Crafting Communication Interventions Toward Sustainable Conditions

The following questions focus attention toward creative communication production, what is referred to above as intentional
communication design.

• What communication interventions can be put into practice in order to create a productive understanding of the problem and long-term change to affect conditions toward sustainability?
• How can communication interventions and sustainable conditions be jointly improved for progress toward community betterment?
• How can communication interventions and sustainable conditions be jointly monitored for progress toward community betterment?
• What are the ways to craft messaging about the problem as an opportunity that simultaneously address the 5 domains of sustainability: Environment, Economics, Socio-Cultural, Technology, and Public Policy

Community Narratives

In order to supplement the framework articulated above, we provide a narrative for each collaboration. We do so by focusing attention on key moments of understanding, for us and for our collaborators. The narratives do not articulate the whole of the projects, but instead demonstrate the crucial points we are making about the local nature of communication and sustainability. In each narrative, answering the questions above, either as consultants, or in partnership with our collaborators, created the conditions to address some component of the problem-opportunity and move the community toward more sustainable conditions.

Minden

Complaints at the Counter and the Possibilities for the Christmas Pageant

Our collaboration with Matt Cederburg, City Administrator of the City of Minden, developed out of the failed effort of another project. Other agencies and researchers in the state had contacted Matt about the possibility of Minden participating in a joint municipal effort to develop zero-net energy housing in a number of rural to mid-sized communities in Nebraska. We were aware of the project and had an opportunity to speak with Matt about his willingness to involve Minden. We followed up with Matt and were curious about his reluctance regarding the other project. He was reluctant to join, in part, because he expressed some more basic needs for the community. In our initial conversations, Matt revealed his concern: the City of Minden was experiencing chronic late-payment of electrical bills, especially in the summer, by many of its residents. Rather than assume this was a non-starter for collaboration, we pursued the issue with Matt and began considering it as a potential problem-opportunity for our project.

We began by interviewing city staff, particularly the employees who manage the office and counter for bill collection. We learned a large percentage of residents pay their bills in person, thus presenting an opportunity for verbal, face-to-face com-
plaints. We learned about their level-pay plan, which requires residents to pay bills on time for twelve consecutive months before they are able to take advantage of the predictable level-pay billing. Finally, we learned about a looming increase in the cost-of-living in Minden: Again water infrastructure was being evaluated and projected costs were being determined for an upgrade in the city.

Additionally, in the Minden portion of the project, we were fortunate to have Randy Cantrell, Ph.D., Professor and Rural Sociologist, from the UNL Rural Futures Institute on our team. Randy provided critical information from the Nebraska Rural Poll regarding mean income, home ownership, and rental statistics.

After these initial inquiries, we decided we wanted to know more about electrical rates and billing from the perspective of the residents and, with Dr. Cantrell’s assistance, we developed a survey for Minden residents. The survey response rate was bolstered by an opportunity for residents to earn $30 for participation: $15 for participating in an online survey and an additional $15 for agreeing to a phone interview with our team. It is important to note that $30 is equivalent to the typical penalty Minden Residents paid for a late electrical bill. Although it was not stated this directly, city staff communicated with bill payers about the incentive at the counter, boosting our participation rate.

The survey focused on questions regarding households: The age of homes, upgrades made to insulation, windows and doors, the age and efficiency of appliances, the practices residents engage in to conserve energy (if they did). The survey also allowed us to investigate differences among these items for homeowners and renters. The results of the survey highlighted a significant gap in efficiency and maintenance between owners of new homes and old homes, and generally between homeowners and renters. These were not surprising results.

The phone interviews, however, filled some gaps of crucial information we were missing. The surveys focused on electric usage and billing, but in the interviews Minden residents spoke of this one utility bill as the one that most often broke their budgets. What we learned, and later confirmed with Matt, was that the City of Minden’s overall cost of utilities was competitive with other nearby cities. This was because water, sewer, and garbage were billed together and were quite inexpensive. Taken together, these three utilities plus electrical rates were, in fact competitive with nearby municipalities. Thus, from the perspective of the City, utilities were affordable. From the perspective of the residents, the electric utility was an outlier because of its high cost.

Put another way, the survey revealed for a significant percentage of the population upgrades in housing were infrequent for the low-income residents of the city, making them particularly vulnerable to high electric bills in the summer because of the drastically increased use of inefficient air conditioners. When these facts are combined with the information that it is not possible to join the level-pay plan because of late-payment in the summer months, these same residents are not able to benefit
from predictable electricity bills. This problem is likely to be exacerbated by the unavoidable future increase in cost of water for Minden residents. Minden city officials and residents find themselves at a crucial point in decision-making regarding all utilities including, especially, electricity.

One final interview added another crucial finding regarding the socio-economics of the community. Minden’s electricity bills are due on the 10th of the month. In an interview with a single father, he informed us that, as an hourly wage earner, he was paid on the 1st and 15th of the month. He explained that he paid his rent, his car payment and bought groceries with his first paycheck, leaving no funds available for his high summer electricity bills. He, in effect, planned to pay his electricity bills late in the summer months because he was out of money until the 15th. In subsequent interviews, we confirmed this practice with two other interview participants.

Thus, our inquiry uncovered a complex interrelationship in this community between an economic problem, an environmental problem (from a conservation perspective), a socio-cultural problem with a particular segment of residents, and public policy problem. In response, Matt has changed the way he talks about “chronic late payment” with the mayor and city council and has put forward proposals to not only move the billing date of electricity bills but also to reconsider the qualifying conditions for the level-payment plan. In addition, he has opened communication with a company in nearby Hastings, NE, Energy Pioneers, to explore the possibility of a community-wide program of home energy audits and retrofitting to improve the building stock of the community in order to make it more efficient. One public policy opportunity Matt is exploring is a way to incentivize landlords to participate in such a program without passing on the costs to renters, thus, improving efficiency and conservation without disadvantaging those who would benefit from lower electricity bills.

One final element of the Minden project that faltered in 2015 but has some momentum for 2016 also developed from our interviews. In one interview, a long-time resident of the community mentioned that part of the community identity of Minden is its recognition as “The Christmas City.” Every year on the town square, the historic courthouse and opera house are decorated with Christmas lights. In collaboration with Matt and the committee that organizes the Christmas festivities, we pursued the possibility of dedicating a “green street” of lights to increase local understanding of energy efficiency. Admittedly, lighting is not to blame for high energy bills in the summer, but Matt and others in the community were very excited about leveraging a culturally significant element of the city’s identity toward public messaging about energy conservation. Awareness and education could go a long way in jumpstarting a program with Energy Pioneers, for example. Energy Pioneers has had community scale success in a number of Nebraska communities but had previously abandoned partnering with Minden, in part, because there was not enough community interest.

In the summer of 2015, we partnered with several students from Creighton University’s Energy Technology Program to study the efficiency and cost-savings of LED Christmas lights, developed initial plans for a residential exchange program for LED
lights, and drafted plans for an LED-only street for the Christmas display. We hope Minden will embrace these programs for their 101st annual Christmas lighting display in 2016.

**Summary of Outcomes:**

- Public policy change to collect electricity bills on the 15th of the month
- Public policy change to reduce minimum qualifications for residents to participate in level-pay
- Potential partnership with local (Hastings) company for community-wide home energy audits and retrofitting
- Embrace local identity to increase awareness of energy efficiency, perhaps making energy efficiency a new component of local identity

**Broken Bow**

“We tried that before”:

**Policies and Relationships as the Main Obstacle to Sustainable Development**

Our collaboration with Broken Bow began with the fortunate realization that a resident of Broken Bow and member of the Broken Bow Green Coalition had both participated in JISC’s Nebraska Sustainability Leadership Workshop and was in contact with WasteCap Nebraska about the possibility of implementing a zero-waste strategy in the city. As the NETF is aware, WasteCap had been transitioning its focus on business waste reduction to a community scale. We partnered with WasteCap because they had already identified a potential partner addressing a sustainability problem-opportunity and because we added sustainability and communication expertise to the collaboration.

Over the first several months of the project, we engaged in a repeated pattern of inquiry and education. We convened several one-on-one meetings with key individuals in the community asking a series of questions about the previous and failed recycling effort and the economic relationships of the governmental and private entities in the community. A typical 2-day visit to Broken Bow would include the following sequence of interactions. Upon arrival, we would meet with the Broken Bow Green Coalition, led by resident and librarian Joan Birnie. Next, we would fill an afternoon, an evening, and the next morning with meetings with the mayor, city administrator, officials from Custer County Economic Development, leadership from the Broken Bow Chamber of Commerce, a representative from Custer County Recycling, the local trash hauler, and the owners of the transfer station. We talked with business leaders about recycling practices, how much recycled material their business generated, the cost of their trash service, and potential incentives to increase recycling. Finally, we would conclude our trips by reconvening the Broken Bow Green Coalition and offer a report of our meetings.

A parallel set of activities conducted by WasteCap served to educate the community about zero-waste strategies and, particularly, in the waste rates of the city compared to other Nebraska communities. WasteCap garnered support from the Nebraska
Department of Environmental Quality to generate and share reports on statewide recycling data and through one-day “sort” evaluation of waste that was processed at the local transfer station. WasteCap and JISC also partnered with the Chamber of Commerce to deploy a survey of business, bolstering our knowledge of recycling practices and interest in increasing recycling.

Breakthrough moments in Broken Bow were very difficult to generate. At these meetings, all of the participants returned to two dominant themes that were obstacles to significant commitment to change of the waste system. First, the effort to educate the community on a zero-waste strategy and, thus, drastically increase recycling was initially met with resistance because, from the perspective of many of the parties involved, “we tried that before” but without success. From our field notes of these conversations, a narrative of this past effort can be reconstructed in the following way. In the 1990s, the trash hauler, still the hauler in Broken Bow today, was approached by the mayor to develop a plan for increasing recycling. At the time, the mayor offered a payment of $20/per ton but in practice, payment was actually $5/ton. Additionally, there was no infrastructure to support recycling pickup. The hauler custom built a trailer with several bins for separating materials at the curbside. Meanwhile, the community residents and businesses had not been educated on recycling practices that led to trash collectors sorting wet, mixed, contaminated materials all along their route. In short, and in a way confirmed by all who remembered the effort, recycling in Broken Bow was doomed to failure. Collecting recycled material became cost-prohibitive for the hauler and he gave up.

Second, as many rural communities do, Broken Bow waste and recycling were operating under an unclear and under-investigated set of economic agreements among the city, the county (in this instance Custer County), a local garbage hauler, and a privately-owned transfer station. Without revealing the business information in these agreements, through our individual discussions we were able to piece together an economic reality in which the city made no revenue from garbage or recycling, the county was losing huge sums of money on recycling, the rate structure for residents and business was arcane because it neither reflected the quantities generated nor incentivized anyone to sort recyclable materials, and the private company that owned the transfer station was likely making huge profits from the whole system.

At the conclusion of several iterations of essentially one-on-one inquiry, we decided to begin convening more deliberative group forums to make plain the shared belief that recycling in the future would fail because of the past, and reveal the economic features of Broken Bow’s waste system that make it difficult to incentivize recycling. It is clear to us that we would not have been successful in our efforts had we convened large groups of people together in the early stages of our inquiry. But because we were in a position to deeply understand both this historical narrative and the details of the economic system, we were able to facilitate conversations toward productive ends.

Regarding the narrative, and in an almost comical way, we were able to articulate the story of the failed recycling effort back
to the participants in the group meetings and share our agreement that, indeed, this effort was doomed to fail. In response, our participants expressed a commitment to not repeat the past and explore more sophisticated processes and systems to improve recycling. Regarding the economic system, light-bulbs went on among city and county officials who now understood how the economic agreements not only made it difficult to imagine implementing a zero-waste strategy, but they actually prevented doing so.

It should be noted there are many other complicating features for this problem-opportunity including transitions in city leadership during our work, and the need to develop community practices for and education about recycling. Nevertheless, several important steps have been taken. Most notably, the city and county have synchronized the contract renewal dates between each other, among these government agencies, the local hauler, and the owners of the transfer station. All waste contracts will be reviewed simultaneously in the summer of 2018. While contract synchronization delays immediate change in the waste system practices, it puts on the calendar a moment in the future when the economic arrangements can be considered collectively and, thus, it prevents a perpetuation of incongruous contract agreements that prevent a systematic approach to waste reduction.

In the meantime, WasteCap and one member of the Institute team have earned grants from the NDEQ to continue community education in preparation for 2018. The grant includes outreach through the local FFA, thus, involving young people in the education of the community regarding waste reduction. The hope is to foster a critical and minimal level of community support so that before the summer of 2018, the City of Broken Bow is poised to drastically reconfigure economic agreements with the operators of waste management.

Summary of Outcomes:
- Widespread agreement in the community that recycling is possible and not doomed because of past history
- Transparency in economic systems that prevented widespread adoption of waste reduction and recycling practices
- City/County coalition in the synchronization of waste management contracts to be realized in 2018
- Continuing community education toward zero-waste in partnership with Broken Bow Green Coalition

Lincoln
“Prairie in the Parks,” The Bandit Mower, and Sustainability Indicators on the Ground

Our collaboration in the City of Lincoln unfolded in non-linear fits and bursts of activity. Our initial effort was in partnership with Milo Mumgaard from the Lincoln Mayor’s office. Milo has been a long-time supporter of and partner with the Joslyn Institute for Sustainable Communities. In conversations with him, he expressed an interest in putting into practice and evaluating the pragmatic utility of sustainability indicators that had been developed by a “Blue Ribbon Leadership Team”
for the mayor (https://lincoln.ne.gov/city/mayor/energy/brlt.htm).

One problem in doing so was that many departments in the city, and a number of city statutes, were creating opportunities to live up to the indicators. (Example: An obstacle we encountered, one that was simultaneously evidence of forward momentum for the City of Lincoln, is that some of the indicators were being already addressed through practices and policies. For instance, we determined for our project it would not be productive to investigate problem-opportunities on water quality and stormwater runoff because the city was being proactive in their policies for new development that required minimum levels of ecosystem services. The city had not solved the matter and met minimum targets for sustainability indicators on these issues, but they were making progress and the solutions were already coming into focus.) A second problem was that many of the indicators were beyond the scope of our project. We mention this initial interest in indicators because it later became relevant again in our collaboration.

Not knowing how it would unfold, Milo arranged a meeting with the Department of Parks and Recreation leadership so that we could explain our project and, perhaps, identify a problem-opportunity to explore. What bubbled to the surface, much like in the conversations that began in Minden, was an articulation of a problem-opportunity through a common-sense expression of a Parks and Rec employee. To paraphrase, he asked what about “the bandit mower”?

The City of Lincoln maintains more than 6,000 acres of land for parks of all kinds and sizes including community and recreation parks, pocket parks, mini-parks, conservation parks, new development parks, sports and athletic facilities, pools, recreation centers, golf courses, and a shooting range. The particularities of classification of parks are not as important as the realization that Lincoln Parks and Rec is a complex organization with complex tasks situated within the city government.

Somewhat through circumstance and now through intentional effort, the Parks and Rec planners have begun to implement a city-wide program called “Prairie in the Parks.” One thread of this program developed simply through “long-mowing” practices that were implemented to reduce the cost of maintaining parks by decreasing the frequency in which parks were mowed. A more proactive thread of the program has been developed through Parks and Rec leadership who are experts in the benefits of rethinking the possibilities for city parks beyond what they described as mowed grass, a few trees and playground equipment. Prairie in the Parks is a broad term that manifests in a vision for parks as healthy micro-ecosystems with native plants, ecosystem services such as water runoff control and filtration, habitats for a variety of species including pollinators, birds, small mammals and insects, and an opportunity for people to interact in spaces that are reminiscent of Lincoln’s native landscape.

Parks in Lincoln become prairie parks in essentially two ways. First, existing parks of mostly mowed turf are transitioned into productive and native micro-ecosystems through planned design and reshaping of the terrain, native planting and man-
agament. These are called conversion parks. Second, new housing developments are required to include park accessibility for new residents and, thus, as Lincoln grows, new parks are designed to include Prairie in the Parks features upon construction. Our consultation with Parks and Rec planners revealed the complications with the Prairie in the Parks programs which were frustrating staff. In conversion parks, residents with homes adjacent to the parks often complained about the unkempt aesthetic of the parks. When long-mowing practices were first instituted, neighbors would complain, offer to donate money to get the parks mowed, or in at least one instance, mow the park. Staff described reports of a “bandit mower” who mowed grass in the dead of night, grass that was intentionally left long by the park staff. In addition, residents complained about how the parks looked, unaware that establishing native plants is a difficult task that often requires three full summer seasons to mature. Native designs also attract wildlife which residents would describe as “pests” and “critters” that had invaded their neighborhoods. Finally, there were complicating matters within the Parks and Rec staff. Whereas the planners and leadership understood the value of these new designs for parks, maintenance staff was unclear about their role in maintaining the parks on a daily basis. One staff member put it this way, “kids on mowers paid by the hour want to mow.” Planners of these parks were often disappointed to learn that plantings they had designed, perhaps plantings that take three years to mature, were carelessly or naively mowed.

In new development parks, difficulties arose as well. Imagine a new homeowner excited to experience her or his new neighborhood. Park construction, in most cases, usually occurs simultaneously with new home construction. Homeowners were often disappointed to learn that the new park in their neighborhood needed three years, at minimum, to mature to an aesthetic that was pleasing to them. Similarly, some residents complained about long-mowing practices, perhaps believing that it made their new park look unappealing.

In summary, in consultation with our collaborators, we came to understand the implementation of Prairie in the Parks as a conflict of perspectives. From a communication perspective, we would describe this as a conflict in the values, beliefs, practices, and interactions that people, in the Parks and Rec department and in the community, associate with the term “park.” The Lincoln project sharply illumined that sustainability problem-opportunities can be unwieldy because of the communicative features surrounding it. In this case, through our observations and inquiries we were to reveal the contested nature of the term park, what the term calls forth in the minds of people in terms of how it is supposed to look, how it is supposed to function, how people are to appreciate it or not, and how it is to be maintained.

With our collaborators, we decided to pilot a communication strategy in a new development park in order to develop resources for Lincoln park planners for future conversions. To be clear, park planners often engage in discussion with residents about park plans and park maintenance, but this was done in a way that was mostly reactionary. Instead, we decided to host a meeting at the home of a resident near a new construction park, and give park planners an opportunity to communicate with residents of this newly constructed neighborhood about the design of their park. On a rainy night in March, park staff
constructed a series of visual displays about the park that included detailed information on the concepts of Prairie in the Parks. They presented information on construction timelines, plant species, terrain, recreation equipment, and accessibility. Residents were incredibly interested in these details, especially those whose property was adjacent to the park. Perhaps most importantly, the district supervisor in charge of maintenance attended and contributed to the meeting, closing the communicative loop between park planners, residents, and those who will maintain the park long-term.

This small intervention demonstrated to park staff the power of proactive communication with residents. In no way did this episode solve all of the communicative problems that occur with residents of Lincoln, especially given the complexity of the Lincoln park system. It did, however, illustrate the necessity to productively engage with residents about parks and jointly craft shared visions of what parks will look like and how residents are invited to interact with and in them.

The project with Lincoln Parks and Rec calls forth an important connection with the topic that opened this narrative: Sustainability indicators. The Joslyn Institute for Sustainable Communities is a leader in the advocacy for employing sustainability indicators in the process of sustainable development. This project reinforces the need to consider indicators for the highest level of visioning and planning, but to also consider how indicators filtrate down into the daily practices of everyday living. The indicators developed by the Blue Ribbon Leadership Team set targets for air quality, water quality, biodiversity, and active living among other categories. The realization of these targets will, no doubt, occur through large-scale municipal policy. But they will also be realized through departments in city government working on projects that cut across the indicators such as Prairie in the Parks. As we have illustrated here, such projects are deeply embedded in the complexity of social relationships, beliefs, values, and communication practices that are uniquely localized.

Summary of Outcomes:
- Discovery of competing values regarding central concept of the problem-opportunity
- Skill development in the proactive and constructive resolution of competing values
- Reinforcement of relationship between sustainability indicators and localized problem-opportunities

Conclusion
Our purpose in providing brief narratives about our community collaborations was to illustrate the application of our Framework for Strategic Communication Toward Sustainable Development. None of the narratives provide an exhaustive account of the whole, nor do they provide an exhaustive use of the framework for inquiry and design of strategic communication. Instead, each illustrates the type of learning necessary for intentional intervention in a community toward sustainable development. Additionally, each provides an account of a complex, local circumstance that was addressed through an intensive commitment to strategic communication. In each of our projects, and in each of our communities, progress has been made toward sustainable development through the application of strategic communication.
Bibliography of Communication and Sustainability Resources


In this analysis, part of its contract with NIFA, JISC determines Quality of Life (QOL) indicators within the Five Domains being employed by five select cities.

<table>
<thead>
<tr>
<th>Five Domains</th>
<th>Community A - Austin, Texas</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Environmental</strong></td>
<td></td>
</tr>
<tr>
<td>• Travel time</td>
<td>• Mean travel time to work, 22.9 minutes.</td>
</tr>
<tr>
<td>• Recycling</td>
<td>• 39% of city collected materials diverted from landfills 107,404,000 lbs. of recycled material in 2012 (22 pounds per household every two weeks). (Goal, reduce waste to landfills by 90% by 2040).</td>
</tr>
<tr>
<td>• Water</td>
<td>• Goal, reduce 25 million gallons of water by 2017.</td>
</tr>
<tr>
<td>• Trails</td>
<td>– Year-round restrictions: prohibit automatic irrigation between 10 a.m. and 7 p.m.</td>
</tr>
<tr>
<td>• Green infrastructure / storm water management</td>
<td>– Watering days: Residential 2 days a week. Commercial and multifamily to 2 days a week.</td>
</tr>
<tr>
<td></td>
<td>• 2013, 39.4 miles of bike lanes 12.5 miles of new sidewalks.</td>
</tr>
<tr>
<td></td>
<td>• 2013, 3,774 trees were planted in parks and 6,949 were planted in a row for green infrastructure and storm water management</td>
</tr>
<tr>
<td><strong>Economic</strong></td>
<td></td>
</tr>
<tr>
<td>• 2013 population 885,400.</td>
<td></td>
</tr>
<tr>
<td>• Median household income $53,946.</td>
<td></td>
</tr>
<tr>
<td>• 2012 estimated per capita income $31,130.</td>
<td></td>
</tr>
<tr>
<td>• 2012 estimated median house or condo value $222,100.</td>
<td></td>
</tr>
<tr>
<td>• Unemployment 4.0%.</td>
<td></td>
</tr>
<tr>
<td>• Industries</td>
<td>• Most common industries in 2012:</td>
</tr>
<tr>
<td></td>
<td>– Professional, scientific, and technical services (12%); Construction (12%); Accommodation and food services (10%); Educational Services (7%); Administrative and support and waste management services (6%); Computer and electronic products (6%); Public administration (6%).</td>
</tr>
<tr>
<td>• Occupations</td>
<td>• Most common occupation in 2012:</td>
</tr>
<tr>
<td></td>
<td>– Other management occupations except agriculture (7%); Software developers and programmers (4%); Construction laborers (4%); Engineers (3%); Retail sales workers except cashiers (3%); Material recording, scheduling, dispatching, and distributing workers (3%).</td>
</tr>
<tr>
<td>• Recyclable value</td>
<td>• Amount of recyclables thrown in the trash valued around $4.7 million. Recycling and reuse industries generated $720 million in economic activity in 2014 and supported 2,600 jobs.</td>
</tr>
<tr>
<td><strong>Technological</strong></td>
<td></td>
</tr>
<tr>
<td>• CO2 reductions</td>
<td>• Recycling 58,000 tons of waste will eliminate adding 178,000 tons metric tons of carbon dioxide. (Goal, reduce CO2 Emission 5% annually).</td>
</tr>
<tr>
<td></td>
<td>• 100% compliance with the new green building standards, by meeting the minimum or above LEED Silver Certification/new square footage of LEED-Certified projects.</td>
</tr>
<tr>
<td></td>
<td>• Currently 93% of all new vehicle purchases are either alternative fueled or hybrid vehicles. (Goal is 95%).</td>
</tr>
</tbody>
</table>
• 25% of total energy supply is through renewables (Goal, 35% by 2020).
• Wind Power: 3 new contracts totaling 570 megawatts. 850 megawatts from 8 existing contracts.
• Solar Power: 30 megawatt Webberville solar farm.
• Biomass: 100 megawatts from Nacogdoches biomass plant.
• 4,000 smart thermostats purchased.
• 161 electric charging stations provided.
• Provided 3,170 kilowatts of residential capacity based solar incentives, 925 kilowatts of commercial performance-based solar incentives.
• 20 kilowatts of solar water heater rebate saving in 2013.
• Solar installations to 16 municipal projects in 2012 included airport, museum and library.

<table>
<thead>
<tr>
<th>Socio-Cultural</th>
<th>Public Policy</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Ethnicity</td>
<td>• Energy</td>
</tr>
<tr>
<td>• Education</td>
<td>• Zero waste</td>
</tr>
</tbody>
</table>
| • Wellness | • Adopted new Energy Code, expected to improve energy efficiency in new homes by 40%.
• Events | • Implementing Energy Conservation Audit and Disclosure (ECAD) Ordinance, include: outreach families, commercial properties, multi-family properties through educational seminars, code enforcement for non-compliant properties.
• Programs | • Outreach to 4,278 residential and 89 commercial participants in the Power Partner Program by conducting public outreach and webinars with information about loans, rebates, assessments, and tools and tips for energy efficiency in residential and commercial structures.
| | • 1,260 businesses and organizations with Zero Waste education, onsite assessments, and technical assistance. |

White alone 68.3%. Black 8.1%. American Indian and Alaska Native alone 0.9%. Asian 6.3%. Native Hawaiian and Other Pacific Islander 0.1%. Two or More Races 3.4%. Hispanic or Latino 35.1%.

High school graduates 86.7%.
Bachelor’s degree 45.6%.
85% of unemployed workers do not qualify for 70% of the available jobs. Half require a bachelor’s degree and another 14% require associate’s degree.
Of the 39,000 unemployed 85% have less than associate’s degree

2013, 5,711 employees engaged in wellness activities.
68 public events held for cultural arts reaching total audience of 13,500.
57,120 students reached through Earth Camp and Austin’s Nature & Science Center.
10% or about 20,000 city youths provided with workforce development, internship, or social service programs.
3 acres of community gardens were created.
<table>
<thead>
<tr>
<th>Five Domains</th>
<th>Community B - Berkeley, California</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Environmental</strong></td>
<td></td>
</tr>
<tr>
<td>• Travel time</td>
<td>• Mean travel time 25 minutes</td>
</tr>
<tr>
<td>• Recycling</td>
<td>• Since 2000, the amount of solid waste sent to landfills from the community dropped by approximately 50%, from 112,498 tons in 2000 to 56,189 tons in 2013. Solid waste disposal decreased 18% between 2012 and 2013.</td>
</tr>
<tr>
<td>• Green infrastructure</td>
<td>• The community wide reduction in waste disposal since 2000 translates into a reduction in per capita waste disposal from 6.4 to 2.9 lbs/person/day.</td>
</tr>
<tr>
<td></td>
<td>• Over 79,000 tons of C&amp;D waste has been diverted from landfills between 2008 and 2013.</td>
</tr>
<tr>
<td></td>
<td>• Plant at least 500 street and park trees per year.</td>
</tr>
<tr>
<td><strong>Economic</strong></td>
<td></td>
</tr>
<tr>
<td>• Industries</td>
<td>• 2014, Population 116,768</td>
</tr>
<tr>
<td></td>
<td>• 2013 Median household income $61,960</td>
</tr>
<tr>
<td></td>
<td>• 2013 Estimated per capita income $41,656</td>
</tr>
<tr>
<td></td>
<td>• 2013 Estimated median house or condo value $698,400</td>
</tr>
<tr>
<td></td>
<td>• Unemployed: 6.8%</td>
</tr>
<tr>
<td>• Occupations</td>
<td>• 2013 Most common industries: Educational services 21%; Professional, scientific, and technical services 19%; Retail trade 9%; Health care and social assistance 8%; manufacturing 5%; Finance and insurance 5%; Administrative and support and waste management services 5%.</td>
</tr>
<tr>
<td></td>
<td>• 2013 Most common occupations: Management occupations 13%; Education, training, and library occupations 12%; Computer and mathematical occupations 10%; Office and administrative support occupations 6%. Business and financial operations occupation 6%; Sales and related occupations 6%.</td>
</tr>
<tr>
<td><strong>Technological</strong></td>
<td></td>
</tr>
<tr>
<td>• CO2 Reduction</td>
<td>• Driving has become a smaller percentage declining from 53% from 2000, 48% in 2010, and 45% in 2012.</td>
</tr>
<tr>
<td></td>
<td>• Driving trips were replaced by increases in both bicycling and walking to work as well as an increase in those working from home.</td>
</tr>
<tr>
<td></td>
<td>• Bicycles accounted for 8% of commuter mode in 2012 compared to 6% in 2000</td>
</tr>
<tr>
<td></td>
<td>• This is the 4th highest cycling to work rate in the nation</td>
</tr>
<tr>
<td></td>
<td>• Car share reduce wide gasoline consumption by an estimated 9,100 gallons per year as of 2012, which reduces the associated greenhouse gas emissions by roughly 178,000 pounds annually.</td>
</tr>
<tr>
<td></td>
<td>• Since 2010, membership in car sharing programs increased by approximately 10% annually. (Goal Trend continues, car sharing is expected to reduce an estimated 800 metric tons of GHG emissions by 2020).</td>
</tr>
<tr>
<td></td>
<td>• The GHG emissions resulting from energy consumption in homes, businesses, and city government buildings decreased approximately 16% between 2000 and 2013. (Goal, achieve a 33% (2% per year) reduction below 2000 levels by 2020 in the Community wide GHG emissions).</td>
</tr>
</tbody>
</table>
As of the end of 2013, 20 buildings are LEED certified, 8 are GreenPoint Rated, 2 projects were built as Enterprise Green Communities Developments, and 13 have been recognized as ENERGY STAR Certified. Within the last three years the number of LEED buildings more than doubled (from 9 buildings in 2010 to 20 in 2013).

The Smart Lights program, offered by Community Energy Services Corporation helped businesses save over 30,000,000 KWh in 2010-2012. (Goal In the 2013-2014 program, SmartLights seeks to reduce energy use by ~3,500 kW and save 17.5 million kWh). (Goal, achieve a 33% reduction below 2000 levels by 2020 in the community).

Smart Lights provided high quality energy efficient lighting and refrigeration improvements to 28% of the approximately 3,500 businesses between 2002 and 2012.

(Goal, achieve a cumulative total of 3,200 solar PV systems installed between 2000 and 2020 at an average system size of 3.75 kW. Translates to an estimated 19 Gigawatt Hours (GWh) of clean solar electricity produced annually by 2020. The cumulative annual energy bill savings would be an estimated $2.5 million (at current electricity prices) by 2020. Annual greenhouse gas (GHG) reductions due to solar PV would be an estimated 9,700 tons).

1,452 solar PV systems were installed between 2000 and 2014, with an average system size of 4.21 kW. (Goal, the City is currently at 45% of its 2020 target of 3,200).

White alone, 77.7%, Black alone 13.2%, American Indian and Alaskan Native 1.2%. Asian 5.3%, Native Hawaiian and Other Pacific Islander 0.2%, Two or more races 2.4%, Hispanic 17.1%.

High school or higher: 94.2%; Bachelor’s degree or higher: 68.2%; Graduate or professional degree: 35.1%

Three farmers’ markets has increased approximately 33%

Since 2001 car-share vehicles and pods increased approximately 35% and 33% respectively since 2010.

800 people participated in the Ecology Center’s Climate Action Programs in 2013, including participation in the Climate Action Coalition, evening climate salons and climate change workshops. The Ecology Center, a nonprofit, began offering free workshops on climate change action in 2008. In 2012, the Ecology Center convened the Climate Action Coalition to help bring Climate Action Plan (CAP) from vision to reality.

Since 2006, the Ecology Center’s EcoHouse has offered green building workshops and tours for community members. In 2013, a total of 131 community members took part in EcoHouse events.

2004, Annual Bike Rodeo which had 200 children in attendance and included bike safety classes, Safe Moves Mock City, bicycle tours of Bike Boulevards, health snacks and entertainment. Each event provides healthy snacks for participants in the morning and raffles for free helmets, pedometers and T-shirts.

2009 Injury Prevention Program served over 3,600 children provided 9 Mock City traffic safety
• Energy

- Between 2010 and 2012, the City installed over 800 new bike parking spaces. 2013 additional 350 new racks were installed.

- Youth Energy Systems hires and trains youth (ages 15 to 22) to provide free energy and water efficiency services to households. CYES trained 230 youth who conducted 4,315 green house calls between 2000 and 2013. The estimated annual savings on energy bills served by CYES exceeds $184,000. The corresponding annual energy savings by these households is nearly 2.3 million kWh (including electricity and natural gas savings). The impact of these energy savings translates to an annual reduction of approximately 1,041 metric tons of GHG emissions. CYES trained 7 youth and served 196 houses and apartments in 2013, resulting in 26,405 kWh of electricity and 1,103 therms of natural gas saved.

- Under Renewable Portfolio Standard, all electricity retailers are required to increase procurement of eligible renewable energy resources to 20% of total procurement by 2013, 25% by 2016, and 33% by 2020.

• C&D Waste

- In March 2011, the City modified its Construction and Demolition Ordinance to maintain consistency with the 2010 Green Building Standards. All newly constructed buildings, building renovations valued over $100,000, and demolitions valued over $3,000, must divert 100% of asphalt, concrete, soil, and land clearing debris and 50% of other C&D debris from landfill disposal.

U.S. Census Quick Facts http://quickfacts.census.gov/qfd/states/00000.html
City Data http://www.city-data.com/city/Berkeley-California.html#ixzz3iW14H2yL
Energy and Sustainable Development http://www.cityofberkeley.info/sustainable/
<table>
<thead>
<tr>
<th>Five Domains</th>
<th>Community C - Colorado Springs, Colorado</th>
</tr>
</thead>
</table>
| Environmental | • Mean travel time to work 19.6 minutes.  
• 2012, about 120 miles of trails.  
• 73% of residents live within a 10 minute walk to playgrounds (3.5 per 10,000 residents).  
• Land for parks 14.4% city area.  
• The city ranked 41st of 50 in park spending per resident, $62 compared with national median $76. |
| Economic | • Population 679,800.  
• 2012, Median Household income $52,622.  
• 2012, Estimated per capita income $28,035  
• 2012, Unemployment 6.7%  
• 2012, Estimated median house or condo value $210,400.  
• 2011, Percent paying 30% or more of income for housing:  
  Renters 47%, Owner with mortgage 33%, Owners without mortgage 10%.  
• Industries  
  • 2012, Most common industries: construction (12%); Professional, scientific, and technical services (10%); Accommodation and food services (7%); Computer and electronic products (6%); Public administration (5%); Educational services (5%); Administrative and support and waste management services (4%).  
• Occupations  
  • 2012, Most Common occupation: Other management occupations except agriculture (7%); Building cleaning and pest control workers (3%); Engineers (3%); First line supervisors of retail sales workers (3%); Software developers and programmers (3%); Driver/sales workers and truck drivers (3%); Retail sales worker except cashiers (3%). |
| Technological | • Energy sources: 59% Coal; 24% Gas; 10% Hydro; 56% Market; .03% Wind; and .27% Solar.  
• 2008-2012: Low sulfur coal reduced CO2 emissions by 24% and SO2 emissions decreased by 48%.  
• Waste  
  • 2012 Cubic yards of waste 2,500,000 tons.  
• 2012 Cubic yards of recycling 400,000 tons. |
| Socio-Cultural | • Ethnicity  
  • White alone 69.4%. Hispanic 17.3%. Black alone 6.1%. Asian 3.1%. American Indian alone 0.3%. Native Hawaiian and Other Pacific Islander alone 0.1%. Two or more races 3.3%. Other races 0.3%.  
• 2012 Quality of Life (QLI) survey: 77% of people said diversity is very important, 16% said somewhat important, less than 5% said it wasn’t important or didn’t know.  
• Education  
  • High school or higher 93.6%. Bachelor’s degree or higher 35.7%. Graduate or professional degree 13.2%.  
• Volunteering  
  • 2013, 200 neighborhood organizations. |
| Health                                                                 | 2012, QLI 78% people volunteered.  
|                                                                      | Causes of death 22% Cancer, 18% Heart disease, 30% other, 3% Diabetes, 2% Chronic liver disease, 2% Influenza/pneumonia, 2% Alzheimers, 5% Cardiovascular disease, 6% Chronic lower Respiratory disease. 7% unintentional injuries. |
| Public Policy                                                        | Percentage of nonprofits serving community interests 23% public, societal benefits. 17% Human services. 14% Religion related/spiritual dev. 12% Education. 12% Recreation, sports, leisure. 7% Arts/cultural/humanities. 7% Health. 3% Environment/animals. 2% International, Foreign Affairs. 1% Other. 88% of nonprofit funding comes from outside the region. |
| - Non-Profits                                                       | Affordable housing waitlist- Section 8 housing wait list is 3,085, with children 53%, with disabilities 40%, with elderly 17%.  
|                                                                      | Affordable housing waitlist Public housing waitlist 1,513, with children 38%, with disabilities 38%, with elderly 25%.  
| Affordable housing                                                   |                                                                 |

U.S. Census Quick Facts [http://quickfacts.census.gov/qfd/states/08/0816000.html](http://quickfacts.census.gov/qfd/states/08/0816000.html)  
<table>
<thead>
<tr>
<th>Five Domains</th>
<th>Community D - Jacksonville, Florida</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Environmental</strong></td>
<td></td>
</tr>
<tr>
<td>• Travel time</td>
<td>• Mean travel time to work 23.7 minutes.</td>
</tr>
<tr>
<td>• Trails</td>
<td>• Currently about 60 miles of bike trails. (Goal, over 100 miles of bicycle improvements by 2030.</td>
</tr>
<tr>
<td>• Water</td>
<td>• Per household average daily water use reduced from 205 to 182 gallons each day.</td>
</tr>
<tr>
<td><strong>Economic</strong></td>
<td></td>
</tr>
<tr>
<td>• Industries</td>
<td>• 2013, Population 2013 estimates 842,583.</td>
</tr>
<tr>
<td>• Occupation</td>
<td>• Median household income $47,557.</td>
</tr>
<tr>
<td>• Industries</td>
<td>• 2014, Unemployed 6.5%.</td>
</tr>
<tr>
<td>• Occupations</td>
<td>• 2012, Estimated per capita income 423,282.</td>
</tr>
<tr>
<td>• Industries</td>
<td>• Estimated median house or condo value in 2012 $127,500.</td>
</tr>
<tr>
<td>• Industries</td>
<td>• 2012, Most common industries: Construction (8%); Accommodation and food services (8%); Administrative and support and waste management services (8%); Finance and insurance (7%); Professional, scientific, and technical services (7%); Public administration (6%); and Health Care (6%).</td>
</tr>
<tr>
<td>• Occupation</td>
<td>• 2012, Most common occupation: Other management occupations except agriculture (5%); Other installation, maintenance, and repair occupations including electrical and electronic equipment mechanics, installers, and repairers (4%); Drivers/ sales workers and truck drivers (4%); Cooks and food preparation workers (3%); Material recording, scheduling, dispatching, and distributing workers (3%); Laborers and material movers, hand (3%); and Ground maintenance workers (3%).</td>
</tr>
<tr>
<td><strong>Technological</strong></td>
<td></td>
</tr>
<tr>
<td>• CO2 reduction</td>
<td>• Wind Power: 2005 signed 20 year agreement to buy 10 MW of wind energy from NPPD from Ainsworth, Nebraska.</td>
</tr>
<tr>
<td>• CO2 reduction</td>
<td>• City will strive to reduce its per capita Vehicle Miles Traveled (VMT) by 10% by 2030</td>
</tr>
<tr>
<td>• CO2 reduction</td>
<td>• Per person annual energy use reduced from 15.042 to 14.286</td>
</tr>
<tr>
<td><strong>Socio- Cultural</strong></td>
<td></td>
</tr>
<tr>
<td>• Ethnicity</td>
<td>• White alone 59.4%. Black 30.7%. American Indian ad Alaskan Native 0.4%. Asian alone 4.3%. Native Hawaiian and Other Pacific Islanders alone 0.1%. Two or more races 2.9%. Hispanic or Latino 7.7%.</td>
</tr>
<tr>
<td>• Education</td>
<td>• High school graduate or higher 2009-2013 87.5%.</td>
</tr>
<tr>
<td>• Education</td>
<td>• Bachelor’s degree or higher 2009-2013 25.5%.</td>
</tr>
<tr>
<td>• Events</td>
<td>• 5,200 events annually</td>
</tr>
<tr>
<td>• Events</td>
<td>• 15 cultural and entertainment venues</td>
</tr>
<tr>
<td>• Events</td>
<td>• Museum attendance per 1,000 people up from 375 to 420</td>
</tr>
<tr>
<td>• Events</td>
<td>• Sporting event attendance per 1,000 people up from 1,743 to 2,489</td>
</tr>
<tr>
<td>• Health</td>
<td>• Causes of death: Heart disease 181.2; Suicide 14.2 per 100,000</td>
</tr>
<tr>
<td>• Surveys</td>
<td>• Kid’s responses: 59% are satisfied with their natural environment; 51% are satisfied how well their opinions are heard; 65% satisfied with transportation options for where they want to go; 38% are satisfied with the way people treat one another; 68% are satisfied with their sport opportunities;</td>
</tr>
</tbody>
</table>
Public Policy

• Housing

• Affordable housing: As of 2000 there were 309,000 units. (Goal, by 2030 is 486,500).
  − Estimated supply for additional dwelling units needed in 2030 is 177,500.
  − Housing Authority will locate new public housing units in 50 percent or more of households earning less than 80 percent of the city-wide median income.

63% are satisfied with their art opportunities; 60% are satisfied with their neighborhood safety;
60% are satisfied with their parks; 65% are satisfied with their school.

• Teen’s responses: 23% are satisfied with natural environment; 19% are satisfied with their opinions being heard; 35% are satisfied with transportation options to get where they want to go; 12% are satisfied with the way people treat each other. 30% are satisfied with the availability of good paying jobs; 46% are satisfied with the sports and recreation opportunities; 31% said they are happy with arts and culture opportunities; 30% are satisfied with safety of their neighborhoods; 20% are satisfied with their parks; 25% are satisfied with the quality of their school.

U.S. Census Quick Facts http://quickfacts.census.gov/qfd/states/12/1235000.html
JCCI Community Snapshot http://www.communitysnapshot.org/
JAX 2025 Community Survey http://www.communitysnapshot.org/
### Five Domains

#### Environmental
- **Travel time**
  - Mean travel time to work 25.4 minutes.
- **Trails**
  - Currently about 227 miles of trails.
- **Green Infrastructure**
  - 2013, 1,811 trees were planted in yards and planting strips.
  - Currently 1,000 acres are being restored. (Goal 2,500 acres of forested parkland restored by 2025).
  - 83% of residents live a ¼ mile from a park.
  - Currently .75 acres per 100 residents. (Goal 1 acre of open space per 100 residents).

#### Economic
- **Industries**
  - 2013, Estimated 2013 population 652,405.
  - 2013, Median household income $70,172.
  - Per capita income $39,886.
  - 2014, Unemployment 4.4%.
- **Occupations**
  - 2013, Estimated median house or condo value $436,600.
  - 2013, most common industries: Professional, scientific, technical services (18%); Retail Trade (12%); Manufacturing (10%); Accommodation and food services (8%); Educational services (7%); Health care and social assistance (7%); Construction (5%);
  - 2013, most common occupation: management occupations (14%); Computer and Mathematical occupations (12%); Sales and related occupations (9%); Food preparation and serving related occupations (8%); Office and administrative support occupations (7%); Business and financial operations occupations (7); Architecture and engineering occupations (5%).

#### Technological
- **CO2 Reduction**
  - 2013 saved 121,290 Megawatt hours of electricity.
  - Residential homes 3% reduction in energy. (Goal is 20% by 2030).
  - Commercial 2% reduction in energy. (Goal is 10% by 2030).
  - 4% Energy Saving in city (Goal is 20% by 2020).
  - 2013, 5% of electricity came from renewable resources. (Goal is 15% by 2020).
  - Increase the number and level of green certified buildings.
    - Residential 40% increase 2009-2013
    - Commercial 179% increase 2009-2013
  - 2012, 49% of commuters drove alone. (Goal is 25% by 2035).
  - 12% increase in transit boardings. (Goal 37% by 2040).
  - 59% increase of bicyclists since 2011
  - 27% increase of pedestrians since 2011
  - Electrified transportation since 2013 saved 9,000 gallons of gasoline.
<table>
<thead>
<tr>
<th>Socio- Cultural</th>
<th>Public Policy</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Ethnicity</td>
<td>• Energy</td>
</tr>
<tr>
<td>• Education</td>
<td>• Currently 42% of homes are in Urban Villages (133,000 out of 318,000). (Goal 45% of homes located in urban villages by 2030).</td>
</tr>
<tr>
<td>• Volunteers</td>
<td>• 20% reduction in serious and fatal crashes (Goal Eliminate serious and fatal crashes by 2030).</td>
</tr>
</tbody>
</table>

- White alone 69.5%, Black 7.9%, American Indian and Alaska Native alone 0.8%. Asian alone 13.8%. Native Hawaiian and Other Pacific Islander alone 0.4%. Two or more races 5.1%. Hispanic or Latino 66.3%.
- High school graduate or higher 2009-2013 93.2%. Bachelor's degree or higher 2009-2013 57.4%.
- 2013, 17% increase in volunteers caring for trees and natural areas.
- 10,000 youth volunteered in parks contributing to 55,000 hours

The Joslyn Institute for Sustainable Communities has determined sustainability indicators for the following 12 communities—two cities each in six states—under the NIFA Quality of Life Dashboard contract.

### Five Domains

**Environmental**
- Water
- Green Infrastructure
- Clean Energy
- Storm Water Management
- Trails

**Economic**
- Industries
- Lowered Cost

**Technological**
- Green Construction
- Public Transit
- Clean Energy

**Socio-Cultural**
- Local Food
- Neighborhood Organizations
- Volunteer work
- Community Improvement

**Public Policy**
- Energy
- Education for conservation
- Zero Waste

### Community 1 - Milwaukee, Wisconsin

- Implemented more than 85% of the first Green Team’s recommendations including reducing City energy use by over 15% by 2012
- Energy and Environment program (ME3) which aims to improve the sustainability of small and medium sized businesses and HOME GR/OWN which promotes neighborhood vitality through new opportunities in local food production and distribution

- Energy reduction efforts which have reduced the City’s energy bill by over $500,000 annually
- Sustainable, low income housing is being offered to families that need it

- Community Shines program for increasing solar installations
- OES has improved through energy efficiency and other sustainability measures over 1,300 homes and 180 businesses in the area

- There are plans that aims to implement cost-effective sustainable projects like more energy efficient homes and better access to healthy, local foods while encouraging citizens and businesses to engage in solutions that are economically, environmentally, and socially smart for the community

- Mayor was able to advocate for removal of invasive aquatic species in the Great Lakes threatening our fishing industry, develop new management principles for sewerage and water treatment facilities in Canada and the U.S., and grow the Great Lakes and St. Lawrence Cities initiative to over 100 member cities.
Community 2 - Madison, Wisconsin

- By 2016, decrease ozone pollutants (NOx, SOx, CO and VOCs) to meet a standard of 60 ppb, which would be more protective of public health than current standard of 75 ppb
- Reduce or prevent spread of contamination in the Madison aquifer by cleaning up existing sources of contamination and preventing new ones from developing.
- Pilot the use of “green” infrastructure techniques and incorporate them into standard street and building design, where appropriate.

- Encourage all commercial buildings be designed or retrofitted to maximize water use efficiency.

- Develop policies and regulations to reduce the use of consumer and commercial solvents with VOCs.

- Promote land use patterns, such as residential densities and infill development to reduce reliance on single occupancy vehicle use and increase use of alternative modes of transportation (walking, biking, transit).
- Develop cooperative relationships with neighboring communities, Dane County and regional planning bodies for joint planning for permanent preservation of open spaces and woodlands.

- By 2020, eliminate incidences of Clean Air Action days, and days that reach the Air Quality Index (AQI) designation of “Unhealthy for Sensitive Groups” levels of ozone or fine particulate pollution.
Community 3 - Minneapolis, Minnesota

- Reduce citywide greenhouse gas emissions 15 percent by 2015, 30 percent by 2025, and 80 percent or more by 2050 using 2006 as a baseline.
- Reduce air pollution in the Minneapolis area to health-based levels recommended by the Clean Air Scientific Advisory Committee (CASAC) of the U.S. Environmental Protection Agency (EPA).

- The original target for this indicator was to clean up 100 sites by 2014. That target was achieved and exceeded in 2010, so a revised target of 170 sites was adopted in 2011. During that year and the following year (2012), the City successfully secured $17.86 million in brownfield grant funding.

- 383 units of affordable housing (<60% AMI) were produced through City programs in 2012. An average of 427 units will need to be produced annually over the next nine years to meet the target of 4,200 units.

- Citywide, permit 70 renewable energy projects annually by 2015.
- The number of rain gardens in the city increased by about nine percent in 2012, rising to 1,515 from 1,402 in 2011. The number of rain gardens has increased 67 percent since 2009, when there were 906.

- Working toward eliminating race/ethnicity disparities in poverty rate for Minneapolis residents by reducing the percentage of minority residents living in poverty by 25% by 2016.
Community 4 - St. Paul, Minnesota

- Plastics recycled increase by 82% (500 tons)
- Energy costs on pace to fall nearly 20% by 2020

- The Penfield is a mixed-use 254 unit market-rate rental housing development
- Financial assistance is offered to those who move to sustainable living developments

- The City continues to develop transit policies and practices for a variety of transportation modes including biking, light rail, streetcars, walking and much more

- The Sustainable Awards program recognizes community members and organizations for making a commitment to creating a more sustainable city. By sponsoring these awards, the city hopes to encourage all residents, businesses, community groups and non-profits in the area to implement similar projects.

- In 2014, residents recycled close to 20,000 tons of paper, glass, metal and plastic beverage and food containers.
Community 5 - Salt Lake City, Utah

- Reduce vehicle miles traveled in the city by 6.5%, to 1.26 billion miles annually.
- Reduce vehicle idling with an effective anti-idling ordinance that results in fewer than 10 complaints and tickets per month.
- Reduce greenhouse gas emissions from community by 10%, to 4.7 million tons annually, through transportation and energy strategies
- Reduce by 10% the amount of waste landfilled for refuse accounts, from the 2012 average of 2,260 pounds.

- Offer down payment assistance for 40–50 low- and moderate-income families.
- Provide low-interest loans to qualified homeowners and investors to bring 300–400 properties up to code and make them more energy-efficient.

- Increase energy-efficient buildings citywide by 10%, to 42 LEED buildings, 37 EnergyStar facilities, and 13,000 EnergyStar homes.

- Continue to exceed national target ratio of 6.5 acres of parks, natural lands, and golf courses per 1,000 people (ratio is 10.3 acres in 2012).
- Eliminate food deserts, and ensure that all city residents have access to fresh food within 1 mile of their homes.

- In 2013, Mayor Ben McAdams challenged residents to increase their recycling by 20% by September 2015. Halfway through the challenge residents have increased recycling by 8%.
Community 6 - West Valley City, Utah

- Establish a procedure to encourage and assist developers and builders in the development of high performance site designs and buildings. Provide some incentive for green design and energy efficiency. Include energy efficiency in affordable housing development guidelines.
- City plans to include some or all of the U.S. Green Building Council’s LEED Neighborhood Development silver criteria or the equivalent as standards in future major residential and mixed use projects.

- Incorporate policy statement(s) supporting alternative energy production, including guidance for photovoltaic/solar heating systems, small wind turbines, and other generating technologies. Vertical Axis Wind Turbines (VAWT), for example, can be built unobtrusively, quickly, and relatively inexpensively
- Aims to reduce the City’s carbon footprint (CO2 emissions) by more than 6,800 metric tons for electricity saved and 290 metric tons for natural gas saved.

- West Valley City has ample developable land, particularly to the north and west, to develop a large, successful, mixed use project, ideally near transit, as an example of new planning and sustainable development trends
- Develop a completed network of sidewalks, bike paths, and trails by 2030. Existing utility corridors could be used as the basis for an expanded trails network throughout the city.

- Use mixed-use and form-based zoning more thoroughly to encourage greater diversity of land uses within districts and neighborhoods
Community 7 - Las Cruces, New Mexico

- Decrease energy consumption in City Operations by 20% per square foot of facilities by 2020
- Provide outreach on available financial incentives and expected return on investment for renewable energy installations.

- Imposed low cost energy measures aim to reduce energy costs in the average office building 10 to 30%.
- Several existing retrofits have already saved the city over 35,000 dollars with and average savings of 20 to 40% per building.
- Property owners have the option of financing renewable energy installations through special property tax assessments.

- Design all new City buildings to attain LEED certification with a focus on maximizing points in the energy efficiency category.

- Hold training sessions on energy efficient behavior, appliances, and construction.
- Conferences open to public regarding affordable solutions for increased sustainability

- Execute grants to install photovoltaic and small wind systems at Convention Center and Museum of Nature and Science.
Community 8 - Albuquerque, New Mexico

- Implemented water management program
- Drinking water is supplied by underground aquifer, this water is treated and conserved.

- Solar rebates are offered, solar panels are recommended.
- Property owners have the option of financing renewable energy installations through special property tax assessments.

- All solid waste is treated by highly efficient water processing plants •LEED certified buildings are expected to increase by more than 30% by 2020.

- Auto emissions are monitored and regulated.

- Water use restrictions are in place during peak heat hours.
Community 9 - Birmingham, Alabama

- Continue organizational and operational improvements to maximize energy and resource efficiency and reduce waste.
- Encourage urban farming and community gardens to reduce food deserts and food imbalance areas.
- Encourage development that protects the city’s water resources.
- Encourage the use of natural drainage in stormwater management systems where feasible.
- Expand city recycling program to more users where feasible.

- Give preference to energy-efficient design, materials and equipment in public facilities and infrastructure.
- Encourage the preservation and adaptive reuse of existing structures to reduce construction waste and conserve energy and materials.

- Consider incentives for the development of multimodal transportation systems that reduce vehicle emissions.

- Encourage energy-efficient design, materials and equipment in existing and new private developments.

- The city launched an effort to promote more sustainable practices in its own operations and to encourage green building in the city
- Removal of economic development restrictions due to non-attainment status of federal air quality standards
Community 10 - Montgomery, Alabama

- Meet with City departments and evaluate past and current operations assessing which practices meet the sustainability criteria.
- Develop an educational tool to share with the public that highlights the City’s successes in sustainable practices.
- Reduce fuel consumption by the City’s heavy duty diesel vehicles by 10% and light duty vehicles by 20%.
- Decrease GHG emissions from City transportation operations by 15%.
- Increase the existing waste diversion rate from an estimated 28% to 35%.
- Reduce landfill disposal per capita by 15% for entire regional watershed.
- Reduce by 10% the five year average of total gallons of wastewater volume generated per capita.

- Reduce by 10% the five year average electrical KW hours consumed per million gallons of potable water produced.

- Update and modernize City’s Engineering Design Standards to promote low impact development and smart growth technologies.
- Plan and complete at least three sustainability demonstration projects (e.g. LEED, LID)

- Sustainability staff shall initiate a new outreach to the public, educational institutions, business community and public service organizations to bring awareness to and promote our sustainability program through the development of new partnerships.
- Foster growth of renewable energy through implementation of at least two public and private partnership projects and transactions.

- Complete the development and implement a new Business Hazardous Waste Management Program for Conditionally Exempt Small Quantity Generators (CESQG) that offers businesses a safe, easy, environmentally friendly and economical disposal option for small amounts of hazardous and toxic waste.
Community 11 - Sioux Falls, South Dakota

- Continue organizational and operational improvements to maximize energy and resource efficiency and reduce waste.
- Consider incentives for energy-efficient, “green” building.
- Encourage the use of natural drainage in stormwater management systems where feasible.
- Encourage vehicle emission inspections to improve air quality, industrial opportunity, and community health.

- Give preference to energy-efficient design, materials and equipment in public facilities and infrastructure.

- Encourage the preservation and adaptive reuse of existing structures to reduce construction waste and conserve energy and materials.
- A majority of the states LEED certified buildings have been constructed in the area.

- The City launched an effort to promote more sustainable practices in its own operations and to encourage green building in the city.
- Removal of economic development restrictions due to non-attainment status of federal air quality standards.

- Expand city recycling program to more users where feasible.
- Encourage urban farming and community gardens to reduce food deserts and food imbalance areas.
Community 12 - Rapid City, South Dakota

- Improved bicycle/pedestrian trails and walkways.
- Air quality regulations for the safety of all citizens
- Provide some incentive for green design and energy efficiency. Include energy efficiency in affordable housing development guidelines.

- Support for alternative energy production, including guidance for photovoltaic/solar heating systems, small wind turbines, and other generating technologies. Vertical Axis Wind Turbines (VAWT), for example, can be built unobtrusively, quickly, and relatively inexpensively.

- Overhaul of public transportation including long range transportation and bus renovations.

- Improved public transportations systems
- Meetings open to public regarding affordable solutions for increased sustainability

- Program has been established to prevent the denial of, reduction of, or significant delay in the receipt of transportation benefits by minority and low-income populations.
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