Steering Committee Meeting
April 25, 2012, 2011; 8:00 am – 12:00 pm
Sheraton Conference Center, 870 Williston Road, South Burlington
(Conference Center is located in the rear of the building)

AGENDA

7:45 Breakfast and Networking

8:00 Call to Order & Introductions
a. Mayor Miro Weinberger, City of Burlington

8:10 Quick Review of Project Status & Documenting Efforts

8:15 Approval of January 25, 2012 Meeting Summary – *ACTION* (attached)

8:20 2012 Interim Indicator Report – Progress Report

8:50 Engagement/Outreach Tools – Sp!ke Advertising

9:15 Break

9:30 Strategy/Action Prioritization Criteria – WORKSHOP EXERCISE

11:30 Next Steps/Engagement Efforts
a. Soon – Look for the final video in email and spread the word.
b. May 1st to May 31st - Submit Comments on Draft Prioritization Criteria; ECOS approval anticipated at the July meeting.
c. May to June - Attend and spread the word about Burlington City Arts engagement efforts to help inform the strategies.
d. July meeting -
- Review first draft of ECOS Plan with regional strategies.
- Review proposed RFP for ECOS Implementation.

12:00 Adjournment - **Next Meeting: July 25, 2012 from 8am to 10am**

PLEASE NOTE: For carpooling/ridesharing opportunities to this event, please see GoVermont 's website.

Steering Committee Meeting Minutes
January 25, 2012
DRAFT

1. **Breakfast and Networking**.

2. **Call to Order & Introductions**. Sandy Miller, ECOS Co-Chair, brought the meeting to order at 8:05am.

2. **Quick Review of Project Status & Documenting Efforts**. Sandy Miller distributed the activity sheet and asked members to sign in and note the amount of time spent on the project to date to help meet federal matching requirements. He then turned the meeting over to Charlie Baker. Charlie Baker ran through the agenda, documentation efforts, project overview and status.

3. **Approval of October 26, 2011 Meeting Summary – ACTION**. Penrose Jackson asked for a motion and second. There were no changes. **Sandy Miller moved, seconded by Jim Dudley, to approve the minutes of October 26th. Penrose Jackson commented that the minutes were complex and complete. Vote: motion carried.**

4. **Acceptance of Analysis Reports – ACTION**. The Final Draft Analysis Reports were submitted on January 13th after a 45 day comment period. 686 comments were received from 18 individuals/organizations. **Garret Mott moved, seconded by Joe Speidel, to accept the Analysis Reports, understanding that as part of the final ECOS product they remain open for amendment until the whole product is finalized. No discussion. Vote: acceptance carried.**

5. **Preview Draft Indicators (attached**). Penrose Jackson reminded the Steering Committee that the indicators are in rough draft form and there is a great deal of work that needs to be done going forward. She introduced Elizabeth Reaves from The Center for Rural Studies, who provided a presentation on the purpose of indicators and provided an example from the Draft Indicator Report. She explained the questions that the ECOS Steering Committee should be thinking about when they review the Draft Indicator Report.

The floor was opened for discussion and comments:

Doreen Kraft, Burlington City Arts: What raised a question for her is her observation that we have had a 60-yr cycle and ended up exactly where we were 60 yrs ago. If we are at 2012 and have already achieved the 2035 target, is that alarming? Will it continue to trend exactly this way or does that raise a different set of questions? Reaves noted another key indicator (not included in this slide presentation) looks at density or the size of lot development in each of these areas and she thinks that helps fill the picture out. Charlie Baker explained that this is not cumulative, and occurs for each time period: do we want to keep growing at this pace? So the question for the future is 'do we still continue to have 80% of growth where we want it to go?' We haven't really reached our target other than in the past five years, and we didn't know what the target was until a few months ago. The

municipalities and the development community changed the trend line in the last few years – an interesting commentary on growth policies in our towns and region.

Jim Dudley, Shelburne: This begs another question: whether the planned growth was so heavy that it had the rural growth percentage wise abnormally low? There was a lot of growth in the growth areas, and that can mask what is happening. Reaves pointed out that the indicators are only part of the story, and still need people to analyze them and build them into the larger narrative. The indicators will be used over a long period of time (10 – 20) years.

Megan Moir, City of Winooski and Program Manager for the City of Burlington Stormwater Program: There almost needs to be an entire definition section. It would help all of us and other laypeople who will review this later, not all are familiar with all the metrics and how the indicators are collected and definitions such as "new structure."

Sara Martinez Osaba: She wonders if there will be the capacity to do primary data collection? Charlie Baker responded, saying he wanted to leave room in the goal statements, and noted that some goals are very light on data; if you know where the data is, that would be a great comment to get. The Report covers four large topic areas, and covers all of us in the room. It will take all of us to participate; if you have data, feed it in, help people understand it or identify priority issues on which data should be collected. This will be as good as we make it. Megan Moir asked if the money for implementation can be used for collecting new data? Baker responded that that is a possibility, and up to the Committee.

Garret Mott, Buel's Gore: Re Natural Systems #7, page 40 - Protect and Enhance Working Landscapes, etc. There is quite a bit of detail, however this should include information on sugaring, the data for which Mott thinks can be obtained from the Vermont Sugarmakers Association; as well, Christmas trees and there is a state association for that. Other piece: most suited to ag land. Development tends to happen on the least expensive to develop land. It's a lot cheaper to carve up a field and lay down fabric and gravel for a road than it is to clear a wooded hillside and bulldoze a road. I have long been concerned that our best ag land is being lost forever this way – or as Joni Mitchell would say 'pave paradise and put up a parking lot.'

Rachel Batterson, Vermont Legal Aid: Regarding the Social Community goals, Pages 45 - In the accessibility piece, one indicator should be owned and rented private housing accessibility. We also should be thinking about walkability of the streetscape and buildings. Reaves asked Batterson to help her locate the data or if this should be primary data; if you don't think it exists, please let us know. Batterson said she is aware that the State just passed a Walkable Streets law [Complete Streets], but she is not good at pointing out the data. Goal 4, Page 48: she thinks it is important to continue to measure housing in its physical relationship to jobs and their affordability. Goal 7: increasing opportunities – she thinks this is really integration (percentage under the Fair Housing Act) and we can use the census or ACS data for this. Goal 8: Is affordable housing co-located near jobs for people with affordability issues? Goal 10: measuring the integration of those schools, Batterson thinks there should be a separate goal for integration, and are most likely beyond that, but perhaps we can fit it in

another place.

Rodney Pingree, Bolton: Natural Systems, Page 42, Goal 8 - Mr. Pingree said that this is significantly deficient in recreational resource identification. The section protects scenic aspects, but if we are going to do a complete job, recreational resources need to be mapped and identified; that would be strongly supportive of Social Community Goal 4, helping the population reach a more reasonable weight standard and activity level. If we don't keep recreational opportunities available, people won't find reasons to go outdoors and become more sedentary over time.

Heather Danis, Burlington District Office of VT Department of Health: Folks may have noticed that there is a Social Community Work group and two sets of sub-work groups (health and education). Ms. Danis said we need to fully form a social community work group, and, in reality, the work group is really the two sub-groups. Staff from Danis' office has written the Health Report, with Barry Lampke spearheading the Education Report. They have wanted to form their broad social community work groups because there are goals (under Social Community) on which they have no expertise or ability to produce reports or goals. For those folks making comments on the social community goals and indicators, please contact us and we will help facilitate the creation of a broader social community work group. If people don't get engaged, there will be some clear health and education indicators but the rest will fall by the wayside without help.

Margaret Bozik, Burlington Legacy Project: Have we looked at how many indicators may be being used by other sustainability indicator projects, and whether it would be possible to do that so we can gauge ourselves against other parts of the country?

Elizabeth Reaves, University of Vermont, Center for Rural Studies: Where indicators did not come up in analysis reports, she referred back to other sustainability projects: Seattle, Portland, Jacksonville, Santa Monica. Both Canada and OECD countries collect quality of life indicators and Reaves is happy to go back through the reports and tell you where those indicators are popping up.

Chapin Spencer, Local Motion: Governance was discussed at their sub-group meeting and it doesn't appear that governance is addressed in the goal indicators. We are talking about trying to get to a new future but not talking about how we need to work collectively, breaking down silos to get there; in our goal statements, we need to look at how we are doing business and making decisions. Why do we seem to have town-by-town governance and so many of our issues are regional? It seems like a policy discussion that we've struggled with in this county, that is a growing metro area, but is making decisions in 18 different selectboards. Spencer said he would like to see something reflected in the plan to help us evaluate how we are making decisions moving forward. Penrose Jackson responded, saying that this is a good opportunity to engage in the social piece. The whole sustainability of ECOS demands that we stay at the table, connecting the dots. We will not move from individual communities to ongoing, cooperative, countywide governance in a moment, this will occur over time. Keep the ethic in play and keep coming to the table. Fletcher Allen is doing a Community Needs Assessment, as are all the hospitals in the state and the Agency of Human Services and Vermont Department of Health and we are talking to each other and sharing information.

Marty Illick, Hinesburg: Marty Illick agrees with Chapin Spencer, Garret Mott and Elizabeth Reaves. Looking across the groups we have created, the next step may be for staff to show us a matrix of all indicators and how they relate to each other. The graph doesn't show how that affects our natural systems so we don't know if the planning areas are serving the natural systems. Analysis is the key, and we need a matrix for our sub-committees to grasp and analyze it at the committee levels. It is difficult to agree on any indicators until Illick sees that part of the project. Elizabeth Reaves responded that a student has helped her develop that matrix. Also CCRPC is working on ways to put the matrix together so that it is easy to use. In the draft Indicator Report, you can look at the growth indicator and then go to the Natural Systems goal and, because you are aware of the connections, look for where they intersect.

Kate McCarthy, Vermont Natural Resources Council: Ms. McCarthy said she is glad everyone is making these comments, observing that the indicators serve multiple goals. McCarthy is working on a separate project and having the same struggle – how can we illustrate what the indicators tell us? You may want to consider, complimentary to the matrix, a system of icons. There can be an icon for walkability, etc. This can also be done with numbers with color-coded circles; it is a really good way for the public to have a snapshot of the interconnections rather than a web diagram.

Garret Mott, Buel's Gore: Built Environment Goal 7, Page 15 - Should we add CCTA ridership numbers as an indicator for how we're doing getting people off the highways, possibly Amtrak as well (the numbers are available). Reaves agreed that the data is available and appears under a different goal.

Kari Papelbon, Underhill: Built Environment Goal 2, Page 10 – Do you have access to information on the number of homes or businesses that net meter?

Alison Hollingsworth, VEIC: Alison Hollingsworth worked on the Energy Analysis report. In the process of doing the report, they discovered that the VT Energy Atlas, a project through VT Sustainable Job Funds, has a lot of information on the sites of public and private renewable generation and the information can be accessed online in a map-based for and information can be emailed. Reaves noted the difference between key and supporting indicators and our need to identify the key and supporting indicators that tell us the most and trigger the alerts. Which do we want our partners to secure?

Rachel Batterson, Vermont Legal Aid: There are some things for which we don't have good data, but that does not minimize their importance because we don't already track that information. Penrose Jackson reminded members that there is a place for comment on the ECOS website.

Andrea Morgante: Social Community Goal #6, Page 49, second bullet – Perhaps we should word this in a different way. Waterways are not getting impaired, it is the infrastructure around the waterways; we shouldn't be blaming the rivers. It is our lack of good planning.

Marty Illick, Hinesburg: Emphasize key and supporting indicators. It might be good to focus on the key indicators first. Natural resources are her background. If the eco-systems are in good shape, then our land use planning is doing the right thing. For her, our baseline indicators and should be around

the natural world. She doesn't see that the report laid out this way, and Ms. Illick wants to advocate for that.

Megan Moir: Moir agrees. Looking through the goals and indicators, while she agrees that water quality health is how Lake Champlain is doing with its phosphorous load or the number of impaired stormwater streams, she thinks because the eco system response can be so delayed, it is important to have intermediate indicators. For example, impervious acres that have some sort of storm water treatment. We do need to keep track of that so we know if we are improving in the interim because we may not see response from the lake or the streams for 20 or 30 years, so we need to keep track of long-term indicators as well as the intermediate ones. Elizabeth responded that she hopes Ms. Moir can provide us with some intermediate indicators.

Jim Brangan, Lake Champlain Basin Program and local Fire Department member: Built Environment Goal 12, Page 20 – Reduce the Loss of Life and Property from Manmade Hazards. Jim Brangan thinks we have good information from fire our departments, which report to selectboards every year. One of the most devastating hazards are structure fires, and there are a few indicators that can be used such as number of structure fires and also fire prevention programs. Empirically we have seen fires go down because of maintained smoke and carbon monoxide detectors. We can get this info from fire departments and fire insurance ratings from insurance companies. This is a real opportunity to bring in some of the great data that is out there.

6. **Next Steps/Engagement Efforts**. Charlie Baker emphasized that there are 150 indicators in this report as possibilities and we just came up with more to add. The difficulty will be what key indicators we need to communicate with the public. As we get further info this, Baker sees the public piece (that we report out) and keeping the more technical piece in the appendix. What are they key indicators and what do we want to report out in terms of our progress? The challenge in the next few months is improving this report and the Comments section on the website will be coming in a few days. We are trying to get comments documented on each goal page.

Cross-sector relationships: We have been talking about the icon matrix notion and that these things are related to other goals. Is there a supporting indicator that will give a statistic about rural development's impact on working landscape might be a supporting indicator under Built Environment goal and is related to the Working Landscape goal; it is important to think about supporting indicators that might help make those connections.

7. **Revised ECOS Working Group Structure**. Charlie Baker thanked all that signed up for Working Groups. Baker noted that one of the process challenges we have been struggling with is that the ECOS project will become the Regional Plan, Comprehensive Economic Development Strategy and the Metropolitan Transportation Plan. But to get there, we need to better integrate the ECOS work with those boards (CCRPC and GBIC). This process is challenging in terms of structure, and perhaps it was not clear enough so Charlie Baker is proposing using the more formal CCRPC structure under the Long Range Planning Committee. ECOS partners such as VEIC, VNRC, Housing, Transportation, Energy will meet along with the LRPC. There are a lot of topics to address: Social Community, Health and

Education may need to meet again but maybe they come together under Social Community; Built Environment was too big so we may have to segregate transportation and housing and then feed it up to a coordinating table at the LRPC so we have a better way to work between the quarterly meetings. The sub-committees have not been set up yet. Please let us, or Garret Mott, know if you feel that a sub-committee needs to be created. The LRPC meets next week and will start talking about what sub-committees are needed, set them up with a chair, and look at the indicators for that topic area and feed back the recommendations so by the first week in April all recommendations have gone through a sub-committee review, development and improvement and fed up to the LRPC and then recommended back out to the ECOS group. All of the boards will be kept in the loop along the way. Jim Dudley asked to have the meeting dates put on the website as well as sign-ups, which we will do. This is an opportunity for the sub-committees to focus on their area, then how they relate to other areas and then feed it up so there will be a collective multi-topic conversation.

Andrea Morgante noted that this project is good at collecting data and allowing us to look at the way we've done things in the past, and she would like to challenge us to think about what data that is missing? We don't want to continue to track data that has not served us that well because we were tracking the wrong thing. Our real challenge is to look forward to creating a shared vision, which is where this project started. Morgante encouraged members to leave this meeting and ask, 'where do we really want to be?' Baker said that hopefully where we want to be is reflected in those goal statements. When re-reading the goal statements, Charlie Baker was struggling with some of them; some may need to have a better statement, so he asked members to provide that feedback as well.

Penrose Jackson mentioned that coincidentally, the Agency of Human Services and the Department of Health are working on an indicator project as well. The United Way is partnering with us and working on indicators that they will track for the County and we are trying to weld this into one indicator report that all the agencies are sharing. Interestingly, the legislature is looking at progress indicators and we can see how much overlap there is and make sure that what we are producing is something that is useful and sustainable annually. The regional planning commission is committed to keeping this going and relevant.

8. **Next Steps/Engagement Efforts.**

a. Review Draft Indicators with your organization

- ☐ Contact CCRPC to attend your meeting (we will contact towns)
- ☐ Submit Comments on Draft Indicators by Friday, March 16

Baker summarized next steps indicating that comments should be made on the website. He said that the comments from today will be put on the ECOS website and he thanked all for giving us a head start on the comments. We will start working with the committees and subcommittees and look over the comments over the next 45 days. Penrose Jackson told members not to hesitate providing input.

b. Communication Tools input

Penrose Jackson said that we have been talking a lot about how we are talking to the community at large; it is not about us, it is about the region. How do we communicate our message? Recently ECOS contracted with Sp!ke Advertising and Ken Millman, from Sp!ke, is here to talk and get your input.

Mr. Millman said he came here as a marketer this morning and it then occurred to him that he is a citizen of Chittenden County and he feels compelled to share some of his feelings: Millman is a business and property owner, an on-again, off-again resident, with a son attending UVM. As a citizen, Millman said, what you are doing is huge, incredibly hard and important. His feelings are similar to the rest of the communities.' Thank you. Failure is not trying - we are trying. Don't get discouraged. This isn't easy.

As a marketer, what you will be seeing first from us and Charlie's core group, is something that might be called elevator speech: who, what, where, why, how, when. What is it? Who is this for? Millman will be giving the "gatekeepers" (ie. the Steering Committee members) a cheat-sheet so you can all start using the same language, and, using this tool, describe what truly is the ECOS project. This will be coming soon.

The ECOS Steering Committee is a major target audience – because you are the gatekeepers. ECOS is providing some basic tools to give others: the newsletter, copies of Poweroint presentations, press release copies that you can use to distribute to your local media or community groups. Millman wants feedback from us - is it working? We want to produce as few *things* (that are not sustainable) as possible; it is a waste of money and contrary to our mission. We have the internet, we are utilizing the web, but how is the newsletter working for you? Do you want it printed? Will a pdf suffice? All feedback is appreciated. Send Sp!ke emails at hello@spikeadvertizing.com so it will get to Ken and Becca Burns, his partner. What is working, what is not?

Rachel Batterson said that, for her, the newsletter is not working; it is too much, all at once. Batterson said it would be nice to have a tweet or an email. VHFA has a blog, tweet and email, or a tweet that is an email. That model works for her.

Jim Dudley said that Shelburne had items in the newspaper, brochures in the town hall, but he said he thinks if you walked around town and asked about ECOS, no one in town is getting it. This bottom-up, is missing the top-down. We can't tell the newspapers what to do, but if every week they hear 'ECOS Project,' they would begin to pay attention. There are limited things we can do at the lower level.

Dawn Francis thinks we need to consider a Facebook page. There are young professionals groups to whom we should make a presentation as well as Champlain Leadership; Dawn would like to see some younger folks involved.

Chapin Spencer said that when we asked for a review of the goals, the response was fairly limited. If

we are really talking about a transformative document for how this region will be, looking out fifty years, we need to figure how to get it into the community in a more substantial way and get a dialog from the ground up. Spencer would love to see first-person testimonials to give some legitimacy to the project.

Joe Speidel, UVM: Mr. Speidel said he was fortunate to be part of the process with Sp!ke. One of the things they talked about was 'Why do I care about this as an individual?' He agrees with Spencer; we have to get out there in small groups and find a way to bring the idea of sustainability to the public's level. What do they care about and what are they willing to do?

Doreen Kraft, Burlington City Arts: We are involved in the engagement phase of this project, which is coming after we complete this work so what we take out to the community has had some radical simplification, then using unique techniques to bring it to the community. They have just completed the grant work for *Our Town,* looking at City Hall Park and its future. Andrea Greyson, BCA Engagement Specialist, who will be working with this group, spent time with over 80 groups and individuals. It is phenomenal what comes out, but you have to get to the simplification piece so that people feel that they can touch it. With the techniques used working with ImageFarm (Andrea can talk about them) they developed a story and drew their ideas. At the end, there have a large visual aid that shows how all those pieces relate illustrating what the group envisioned. Also Kraft would like to take this through photographic essays so that when you walk into the Mom and Pop store or a library, you will see a reflection of the young people in our community and what they are thinking about. Kraft thinks this engagement will materialize at the end of April.

Debbie Ingram, Vermont Interfaith Action/Town of Williston: We should one get the word out on Town Meeting Day by using a few power point slides or table displays that can be sent out to the towns and can be used with people we are seeing face to face.

Heather Danis commented on the website, saying she thinks it is difficult to navigate. There is a page on which she is not able to click on the project phases; she can forward the link.

Penrose Jackson asked members if there were anyone who they would like to see at the table; we have had several new members join us today, and that is wonderful.

Jackson said that 16 years ago Champlain Initiative (CI) came into being after a long process. Jackson has seen a good many of the SC members at the CI meetings over the years. When CI first came together, it was the first time people talked to each other; there was not this level of engagement and mutual support wasn't apparent. We were afraid to share culturally and socially - but things have changed enormously. Champlain Initiative was initially supported by Fletcher Allen but as this project came forward, they realize that they are sitting together twice. So Champlain Initiative will declare victory, fold up its tent and has cast its lot with ECOS moving forward in keeping us connected and working together for a sustainable community, where Champlain Initiative began. It is a wonderful evolution, get ready to party and celebrate success.

As part of that, we will have a four-hour meeting at the end of April. If anyone wants a tent in their backyard, let us know; we are looking for a location. We want to put you to work, please dress casually, roll up your sleeves. Please sign the blue sheet, the federal government wants to know you were here. Heather Danis said she wants to make sure she is not giving out misinformation as questions are coming up about the implementation money. She assumes we are using the goals, and the data, the indicators and prioritized actions to make decisions about what gets funded. She assumes that there is an RFP process. Charlie Baker said that the process will be up to the Steering Committee, but that process has not yet been determined.

8. Adjournment. Without further business, the meeting adjourned at 10:02am.

Respectfully submitted,

Leslie Bonnette
Executive Assistant

MEMORANDUM

DATE: April 18, 2012

TO: ECOS Steering Committee

FROM: Regina Mahony, CCRPC

RE: ***2012 Interim Indicator Report***

The 3rd Phase of the ECOS Project was to develop indicators that we will use to track our shared progress in meeting our goals related to the natural systems, built environment, economy and social community. Evaluating our progress towards our goals will allow us to focus resources on those areas that most need additional attention to achieve a healthy, inclusive and prosperous community.

The Draft #1 Indicator Report was presented at the January 25th ECOS Steering Committee meeting. Between February 1st and March 16th the draft Indicator Report was out for public comment. Over 400 comments were received; and the LRPC and sub-committees have proposed revisions. The *2012 Interim Indicator Report* includes these comments and revisions. The Report has also been reorganized with the addition of topic areas to make the document more digestible.

This report is a first attempt to distill the goals, key issues and high level outcome or result related indicators for our region. Some of them do not perfectly capture the goal statement but were an attempt at identifying a proxy indicator. There are often data gaps, and performance measures that will be carried forward to Phase 4 of the ECOS project (priority implementation strategies, projects and actions). For the annual indicator reports CCRPC will work with the ECOS partnership to refine the list of indicators to those that have the most value, and those that we can reliably report on. To support these efforts, we will explore the possibility of formalizing the partnership to produce the Annual Indicator Report through a Memorandum of Agreement amongst the organizations.

On April 25 we will ask the Steering Committee to recognize all of the hard work that has been invested in this interim product and report out the 2012 Interim Report noting that the report will: 1) be paused at this stage, evaluated, and improved for 2013; 2) inform the development of criteria to be used in prioritizing strategies/actions/projects; and 3) still have an opportunity for comments to be received on the website.

If you have any questions, please contact Regina Mahony at rmahony@ccrpcvt.org or 846-4490 x28. Thank you for your assistance and consideration.

MEMORANDUM

DATE: April 18, 2012

TO: ECOS Steering Committee

FROM: Regina Mahony, CCRPC

RE: ***Phase 4 – Strategies/Actions/Projects Review Criteria Workshop***

The 4th Phase of the ECOS Project is to develop prioritization criteria; and subsequently prioritize implementation strategies/actions/projects to achieve our common goals. The strategies and projects will be incorporated into the Draft ECOS Plan (Regional Plan, MTP and CEDS).

Purpose of the Prioritization Criteria: We are hoping that the prioritization criteria will be multi-functional and will:

1. Serve as a tool to prioritize regional strategies in the ECOS Plan
2. Serve as a tool to prioritize projects for the MTP and CEDS
3. Serve as a tool to prioritize actions/projects to be funded through ECOS
4. Serve as an on-going tool to help municipalities and partners gauge the degree to which an action or project furthers the goals of the ECOS Plan
5. Possibly help to inform the Regional Plan's Substantial Regional Impact component

At the April 25, 2012 ECOS Steering Committee we will present an initial draft of the prioritization criteria and will break into small groups to run example strategies/actions/projects through the criteria. In doing this exercise we'll ask that the groups determine:

- Does the criteria tell us if an action/strategy/project meets our goals?
- Does the criteria work consistently for planning, infrastructure, development and program type actions/strategy/projects?
- What needs to be revised, clarified, added, deleted?

We will then refine the prioritization criteria based on feedback from this workshop; put it on the website for public comment from May 1st to May 31st; and have the LRPC and sub-committees work on it. Subsequently we will be gathering strategies to run through the prioritization criteria. Therefore at the July meeting we will be asking the ECOS Steering Committee to approve the prioritization criteria; review the first draft of the ECOS Plan with the strategies; and review and adopt the proposed RFP for the ECOS Implementation funding phase.

If you have any questions, please contact Regina Mahony at rmahony@ccrpcvt.org or 846-4490 x28. Thank you for your assistance and consideration.

Chittenden County Indicators

2012 Interim Report*

4/18/2012

An ECOS Report

Indicators for the ECOS project provide a shared lens to track the progress of Chittenden County against our goals related to the natural systems, built environment, economy and social community.

Evaluating our progress towards our goals will allow us to focus resources on those areas that most need additional attention to achieve a healthy, inclusive and prosperous community.

★ Please note that there are a number of indicators that need to have data either updated or added. Also note that performance measures related to strategies have been highlighted in yellow as they will be deleted from the Indicator Report and carried into the next phase of ECOS for use in prioritizing strategies for implementation.

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ECOS Introduction

Sixty-five organizations have come together in partnership to support the implementation of a regional plan for sustainable development in Chittenden County we are calling ECOS (Environment, Community, Opportunity and Sustainability). These partners include all 19 municipalities, state agencies and multiple organizations representing business, regional agencies, and non-profits.

The ECOS goals for Chittenden County are representative of the common values that Chittenden County residents share. The ECOS process and the resulting plan underscores the understanding that when decision-making is localized and accountability is shared across planning organizations, agencies and among stakeholders, the greater the likelihood is that we will achieve our goals. The ECOS plan will provide a whole system perspective that connects actions taken to address one issue with the effects it has across other topic areas.

Indicators for the ECOS project will provide a lens to track our shared progress in meeting our goals related to the natural systems, built environment, economy and social community. Evaluating our progress towards our goals will allow us to focus resources on those areas that most need additional attention to achieve a healthy, inclusive and prosperous community.

- Focused partners = Focused Region = Success

ECOS overview

The ECOS project includes 5 phases: In the first phase of the project, the ECOS Steering Committee drafted goal statements for public review. These goal statements were drafted after reviewing 60 planning documents and 2500 statements from those documents. The goal statements were divided into four topic areas for ease of discussion. These topic areas are: 1) Built Environment; 2) Economy; 3) Natural Environment; and 4) Social Community.

The second phase of the project was focused on data analysis to achieve common understanding in the areas of economic development, natural resources, housing, transportation, land use, energy, public health, and education. The draft analysis reports were presented to the Steering Committee at the end of October, with public review during November and December, 2011. Based on public comment, these reports were revised and accepted by the Steering Committee in January, 2012.

Phase 3 is the development of indicators that will demonstrate how well we are achieving our goals. The draft indicators were presented to the ECOS Steering Committee in January with public review in February and March, 2012. The ECOS Steering Committee will consider accepting the indicators with revisions based on public comment at their April meeting.

Phase 4 is prioritizing strategies and actions to achieve our common goals. The first draft of criteria to be used in prioritizing will be presented in April 2012 with approval scheduled for the July Steering Committee meeting. Using the prioritization criteria, a draft ECOS Plan will be presented for review at the July ECOS Steering Committee and published for public review through

September, 2012. The ECOS Plan will be considered for approval by the ECOS Steering Committee in October.

The results of Phases 1 through 4 will be used in the refinement and adoption of the ECOS Plan (or Chittenden County Regional Plan (incorporating the Metropolitan Transportation Plan and Comprehensive Economic Development Strategy) by CCRPC and GBIC. The Plan will continue to live as we use indicators annually to track progress and revise priorities to achieve our goals.

Phase 5 is implementing the actions. The ECOS Steering Committee will decide upon the prioritized actions to fund near the end of 2012 with $280,000 of federal funding budgeted as well as other resources that may be applicable.

A key component of the work in each of these phases will be the integration of public comments and ideas to reflect shared implementation priorities and to develop a common vision for the region's future. The initiative includes a comprehensive outreach component to engage Chittenden County citizens of all ages and backgrounds in the development of the project goals and outcomes. As part of this effort, the project will use a wide variety of techniques (including art and artists) to reach-out to and involve different constituencies, particularly those groups and individuals who do not typically participate in public planning projects.

Indicators Purpose

Indicators are quantitative measures that the region will use to measure our success in attaining our goals. They are tools that are designed to alert us to the condition of our system. They allow us to reflect on where we have been, where we are now, and what critical areas need our attention if we are to achieve our goals.

Indicators:

- Tell us if we are moving towards our goals
- Simplify complex systems
- Identify priorities
- Alert us to issues that need attention and analysis
- Assist in decision-making
- Help us to tell the story

It is important to remember that indicators are powerful, important, and necessary, tools, but they still need people behind them to make our community sustainable.

ECOS Indicators

2012 Interim Report: This report is a first attempt to distill the goals, key issues and indicators for our region. Most of these indicators are familiar. Some of them do not perfectly capture the goal statement but were an attempt at identifying a proxy indicator. There are often data gaps which we should discuss to determine if there is an existing data source or a need to consistently collect data that is not currently collected.

The intent of this report is to include only high level outcome or result related measures. However, this interim report also includes Performance Measures, which are used to track the implementation of our actions and strategies. These are included at this time so that we can easily incorporate them into the Phase 4 work (priority implementation strategies, projects and actions). These have been highlighted in yellow and titled appropriately. This interim report also includes data gaps and additional analysis to be conducted in the future. This information has been included to alert the reader that this information has been discussed and considered, but there currently isn't enough data to analyze these issues. These will also be incorporated in to the Phase 4 work (priority implementation strategies, projects and actions).

Future Annual Reports: We have committed to annually update these indicators. For the 2013 Indicator Report we will work with the ECOS partnership to refine the list of indicators to those that have the most value, and those that we can reliably report on. To support these efforts, the Chittenden County Regional Planning Commission is committed to annually updating this indicator report with the assistance of key partners. We will explore the possibility of formalizing the partnership to produce the Annual Indicator Report through a Memorandum of Agreement amongst the organizations.

One component that will be considered in the next iteration is incorporating some symbols to more easily determine those indicators that are going in a good direction (☺⇧👌), are okay (😐⇔👌), or are going in the wrong direction and need attention (☹⇩👎). By clearly identifying those indicators that need attention we can evaluate current efforts and assist decision-makers in revising actions to reverse the negative trend.

Cross Reference Matrix: The following report is organized by Four Broad Goals, Fifteen Topic Areas, and Thirty Six Goals. Many of the topics and goals are dependent and related to other topics and goals. Therefore many of the indicators are cross-cutting and will tell us how we are doing on achieving more than just the goal they are listed under. There are cross reference matrices in the Appendix (there is one for each broad goal: Built Environment, Economic Infrastructure, Natural Systems and Social Community) to help the reader understand some of these cross-cutting relationships. If it appears that a particular set of data, or indicator is missing from a goal, look for it under one of the cross referenced goals in the tables in the Appendix.

Demographics

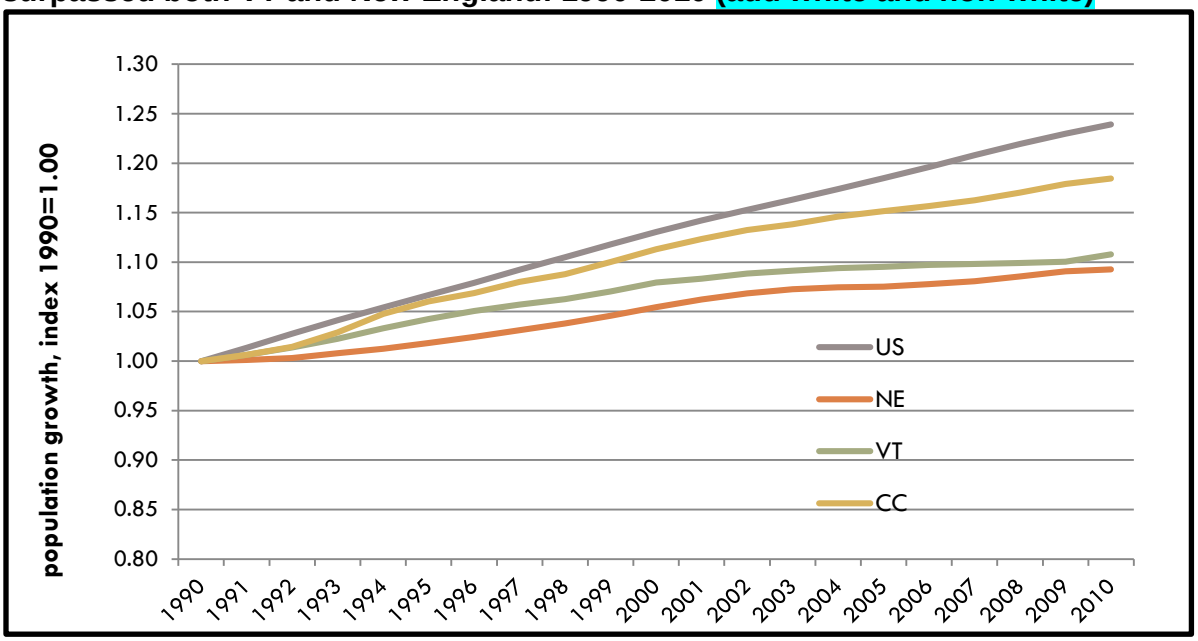
Information about the people in Chittenden County helps us to understand the nature of our community and how we are changing. It can help decision makers anticipate potential pressures on the wider social, economic and physical environments. Factors such as population growth, age, ethnicity, migration and household makeup are often key determinants of conditions across a whole range of issues affecting quality of life.

- **Population change in Chittenden County**

	1960	1970	1980	1990	2000	2010	2020	2035
Population	74,425	99,131	115,534	131,761	146,571	156,545	174,348	205,445

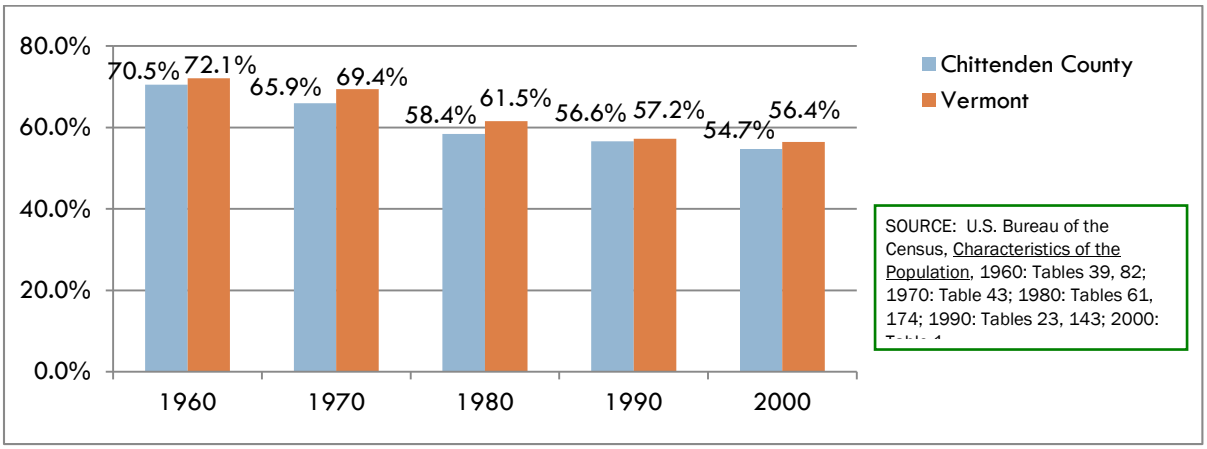
Sources: US Census Bureau. 2011 Woods and Poole Forecast for Chittenden County 2005-2035.

- Population Growth Rate - **The Chittenden County population growth rate has surpassed both VT and New England: 1990-2010 (add white and non-white)**



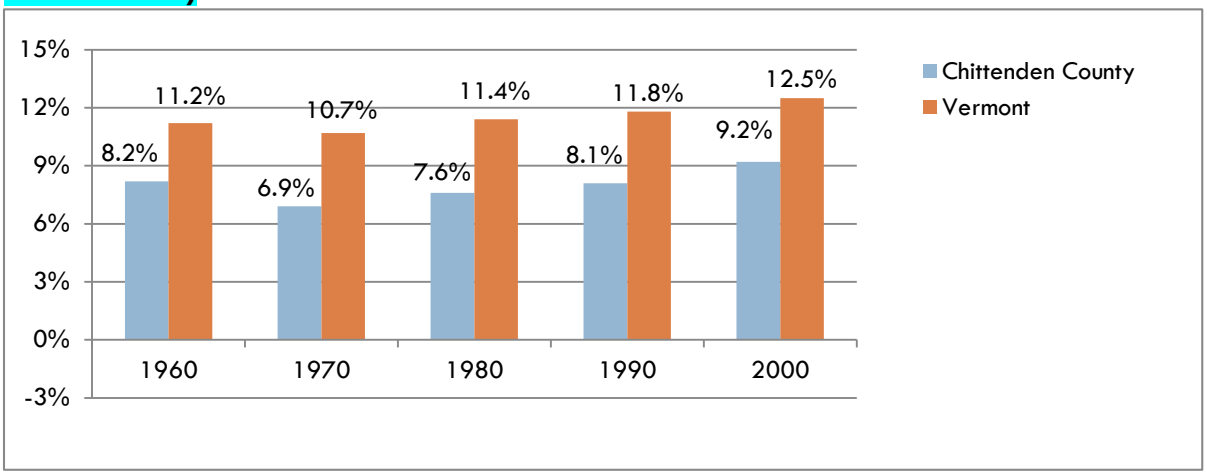
Source: U.S. Bureau of the Census

- **Percent of Residents Born in Vermont in Chittenden County and Vermont, 1960 – 2000 (add 2010)**

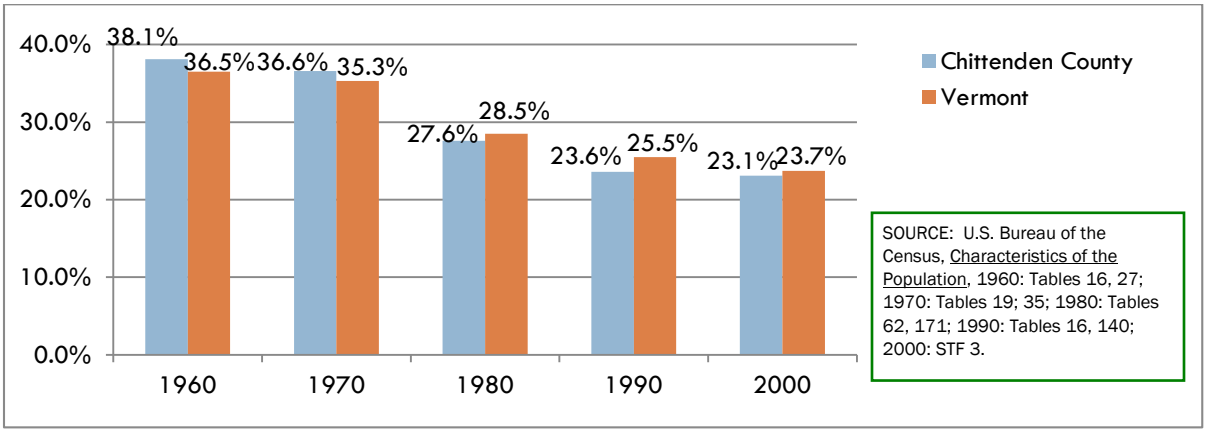


Age

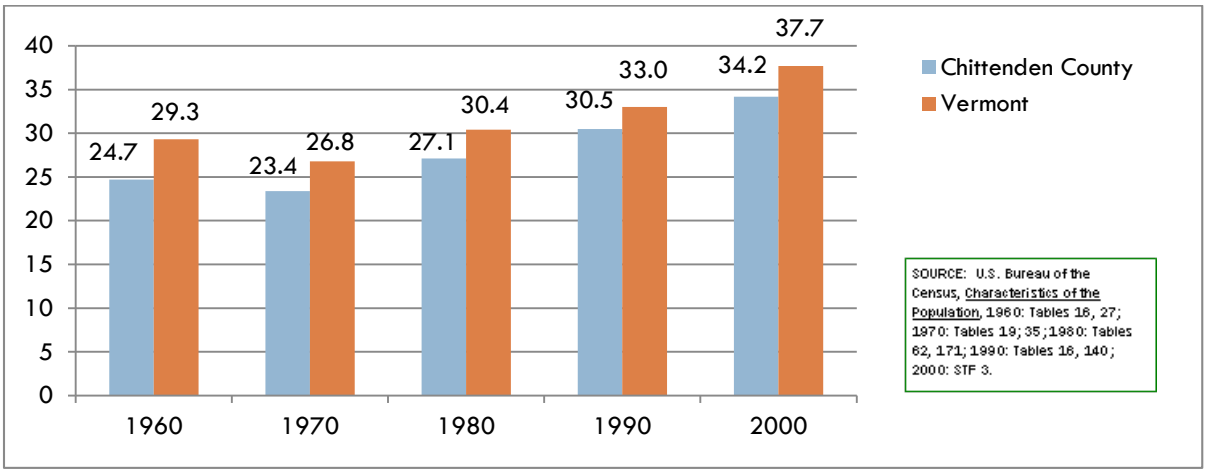
- **Percent of Residents Age 65+ in Chittenden County and Vermont, 1960 – 2000 (add 2010 and US)**



- **Percent of Residents Under Age 18 in Chittenden County and Vermont, 1960 – 2000 (add 2010 and US)**



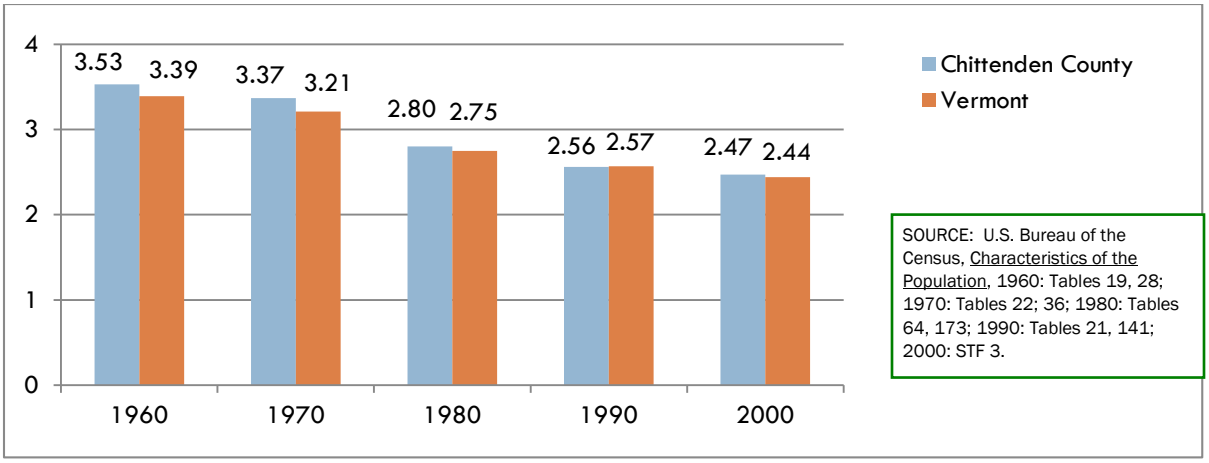
- **Median Age in Chittenden County and Vermont, 1960 – 2000 (add 2010 and US)**



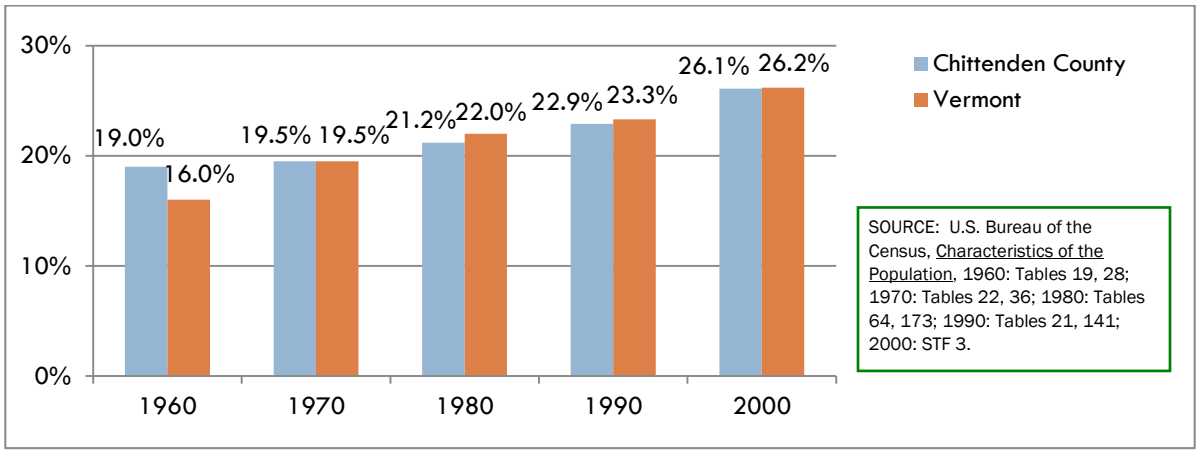
- **Share of non-white K-12 public school enrollment by Supervisory Union district**

Families and households

- **Average Household Size in Chittenden County and Vermont, 1960 – 2000 (add 2010 and disaggregate by race)**



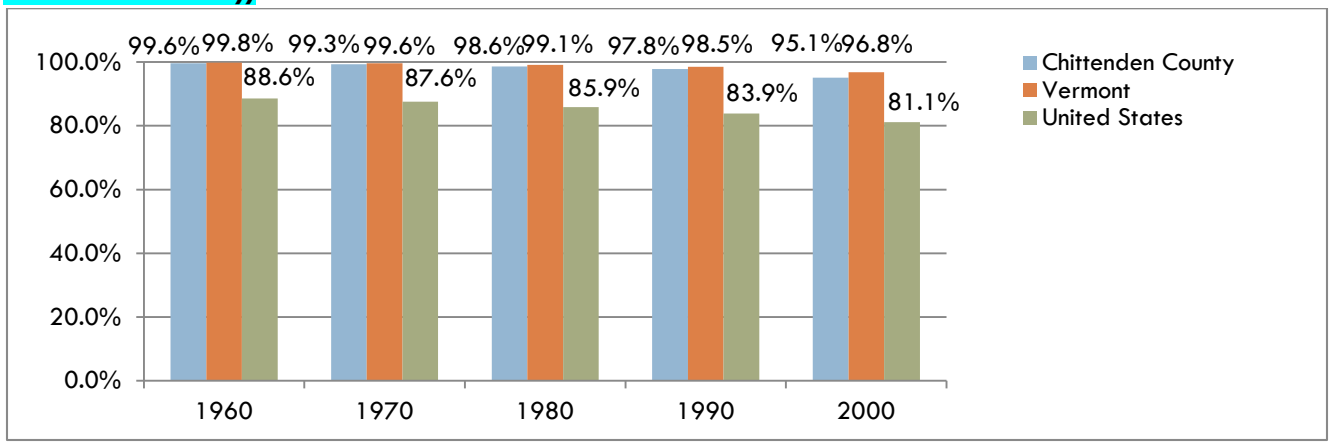
- **Percentages of Total Households that are Single Person Households in Chittenden County and Vermont, 1960 – 2000 (add 2010)**



- **Percentage of non-white households in each municipality**
- **Percentage of language other than English spoken in households in each municipality**

Race/Ethnicity

- **Percent of Residents who are White, Non-Hispanic in Chittenden County and Vermont, 1960 – 2000 (change to % non-white (census) (add 2010, reverse data to show non-white))**



- **Map % change in population by race/ethnicity by census tract**
- **Dissimilarity Index by County**. (Source: http://www.dhca.state.vt.us/VCDP/Vermont_AI_Draft_2_10_12.pdf)
- **The distribution of racial or ethnic groups across a geographic area can be analyzed using an index of dissimilarity**. This method allows for comparisons between subpopulations, indicating how much one group is spatially separated from another within a community. The index of dissimilarity is rated on a scale from 0 to 100, in which a score of 0 corresponds to perfect integration and a score of 100 represents total segregation.1 The index is typically interpreted as the percentage of the minority population that would have to move in order for a community or neighborhood to achieve full integration. A dissimilarity index of less than 30 indicates a low degree of segregation, while values between 30 and 60 indicate moderate segregation, and values above 60 indicate high segregation. Dissimilarity indices in the following table show that the State, including the City of Burlington, has low to moderate levels of segregation between Whites and minority populations. In addition to a White/Black index of 38.8, the State of Vermont has a White/Asian index of 41.8, which suggests that both groups are moderately segregated throughout the State. Additionally, the State has a White/American Indian Alaska Native (AIAN) index of 27.7, a White/multi-race index of 16.6, and a White/Hispanic index of 18.5. These numbers indicate that these subpopulations are more integrated across the State than Blacks and Asians.

Chittenden County	Minority Population	White Population	Total Population	Dissimilarity Index
Black	34,44	35,078	36,821	42.2
Hispanic	3,087	150,426	156,545	18.1
Asian	4,447	150,426	156,545	30.4

Disabilities

- **Disability status of Chittenden County residents (relative to VT and US)**
  About 14,000 people in Chittenden County were identified as disabled in 2010. Income of people with disabilities is far below that able bodied population, reducing their ability to afford housing and further limiting their housing choices.

Built Environment

Broad Goal: Make public and private investments in the built environment to minimize environmental impact, maximize financial efficiency, optimize social equity and benefits, and improve public health.

LAND USE

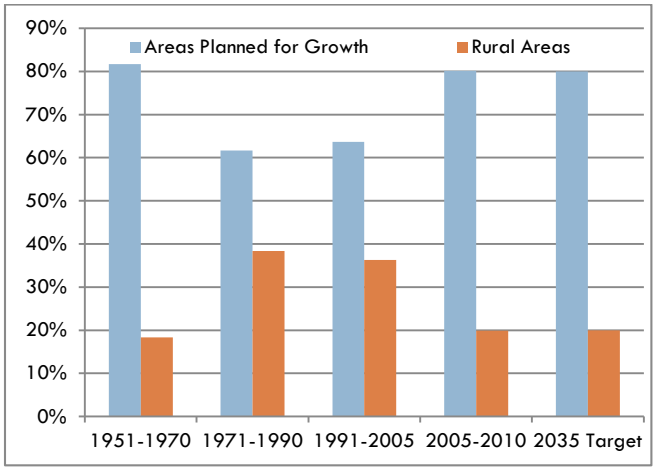
SUB-GOAL 1 - LAND USE PATTERN - All future development will support, maintain, and reinforce Vermont's historic settlement pattern of compact hamlets, villages and urban centers separated by and harmonizing with working and natural rural countryside.

Key Issue - Why this is important

- Over the past 60 years development trends, zoning regulations, and consumer preference have shifted growth away from the metropolitan areas around Burlington, to more suburban and rural locales. This resulted in scattered development at low densities that consume large amounts of land, high infrastructure costs, and little opportunity for social interactions.
- Recent studies and surveys indicate that households are choosing to live in areas with shorter commute times, nearby shops and services, and more transit options. This growing demand indicates that the small lot and attached accessible housing stock may be in short supply.
- Forest and agricultural land fragmentation and increased parcelization have meant that the number of parcels in rural areas has increased while their size has decreased, diminishing their economic viability, scenic, and the ecological services they provide.
- Future land-based opportunities for farming and forest based products, recreation and tourism may become more limited as suitable open land becomes less available. This has far reaching consequences for the future of Vermont's local and tourism economies.

Key Indicators - How are we doing?

- **Percent of New Structures in Areas Planned for Growth: 1950 – 2010**



Source: 1951-2005, UVM Year Built Data, 2005-2010, VT e911 board esites, 2035 Target, CCRPC

- **Net Acres of agricultural and natural resource land lost annually to development per new Resident** (requested by Partnership for Sustainable Communities)

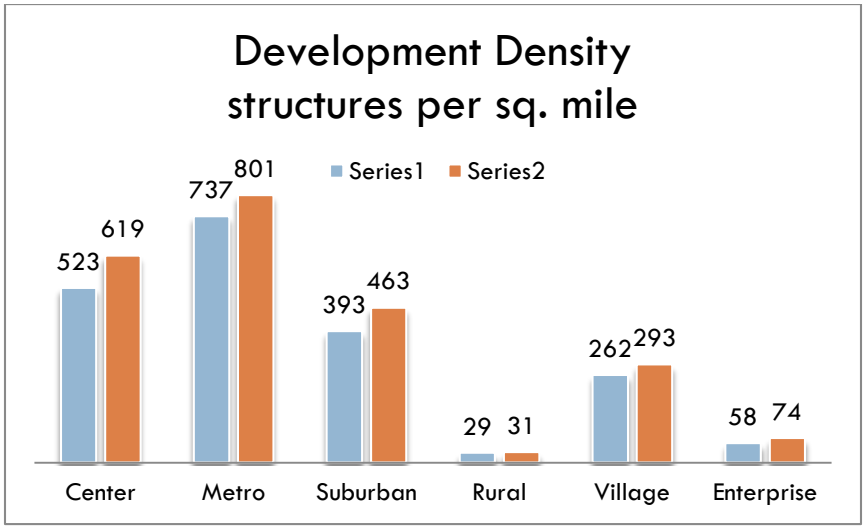
Other/Supporting Indicators

- **Change in Average and Median Parcel Size**

Average and Median Parcel Size (acres)

Planning Area	Average Parcel	Median Parcel
Center	0.9	0.3
Metro	0.6	0.2
Suburban	1.0	0.4
Rural	16.1	3.7
Village	1.3	0.6
Enterprise	3.9	1.8

- **Existing Development Density by Planning Area**



- **Data on agricultural uses that demonstrates that working landscape is being preserved**
- **About 21% of rural Planning Area is enrolled in the current use program for agricultural or forestry purposes.**

Total acreage in farms	Avg farm size	Med farm size	# Farms
83382	141	63	591

- **Population per sq. mile**. Source: CCRPC
- **Change in housing and employment density**. Source: CCRPC
- **Percent of single family and multifamily by planning area.** Source: CCRPC

Performance Measures of Strategies:

- **Percent of total structures in State Designated Smart Growth Program Areas**

SUB-GOAL 3 - BROWNFIELDS - Clean up contaminated properties for productive reuse.

Key Issue - Why this is important

- A sustainable society operates without contributing new contaminates to the environment, but also cleans up old contaminants and turns those lands into productive use. Contamination impairs the environment, poses risks to human health, and discourages productive use or reuse of the property.

Key Indicators - How are we doing?

- **Total # Chittenden County sites with completed corrective action** This indicator can be obtained from DEC's Waste Management ID database (WMID), searching for the different categories of clean-up completion: Certificate of Completion, Sites Management Action Completed, No Further Action Plan or No Further Remedial Action Plan. This database includes properties in the Brownfields, Spills and Active Hazardous Waste Sites lists (all of these lists have contaminated properties).

Other/Supporting Indicators

- **# Chittenden County sites with completed corrective action (by year)** This measures how many sites are getting to the completion stage each year. Obtain from WMID. Note that this is a measure of annual clean up "output." Some contaminated sites can take many years to clean up, so this is useful but not appropriate as a key indicator.
- **Total # Chittenden County sites that have been reported with contamination** This measures the # of known sites with contamination (including those that have been cleaned up). Obtain from WMID. Note that this is not the total number of contaminated or potentially contaminated sites in the County, only those that have been reported; there is no way of measuring the total number of contaminated or potentially contaminated sites.
- **# Chittenden County sites that have been reported with contamination (by year)** This measures how many contaminated sites are reported to DEC annually. Obtain from WMID. It is a measure of the annual "input" to the regulated clean-up process. Note that this is not the number of "new" contaminated sites, but rather a measure of sites that are newly identified as being contaminated and reported.

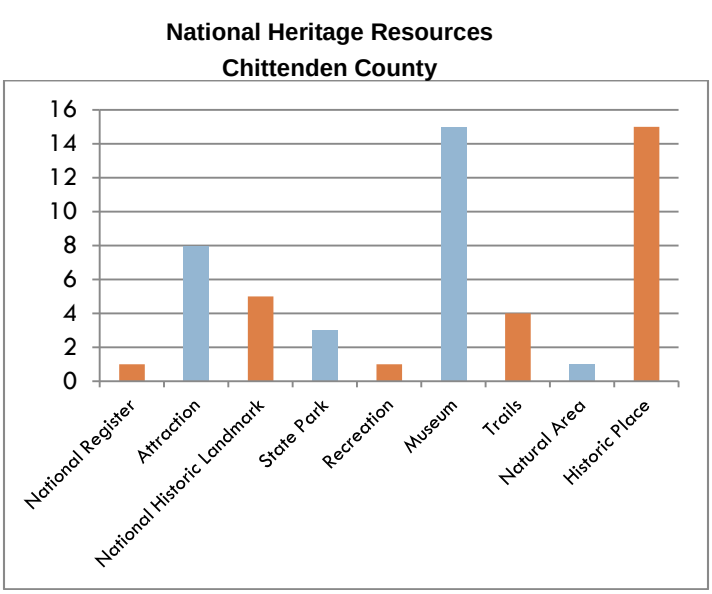
NOTE: Numeric targets may not be appropriate in this case. While a larger number indicates progress in cleaning up contaminated sites, we don't want to have contaminated properties in the first place. A smaller number doesn't mean fewer contaminated sites exist, but only that fewer sites were reported. Clean ups vary with the complexity of contamination so it can take several years to clean up a site; setting an annual target for completed status is inappropriate. Nevertheless, the number of sites with completed corrective action status should be increasing over time.

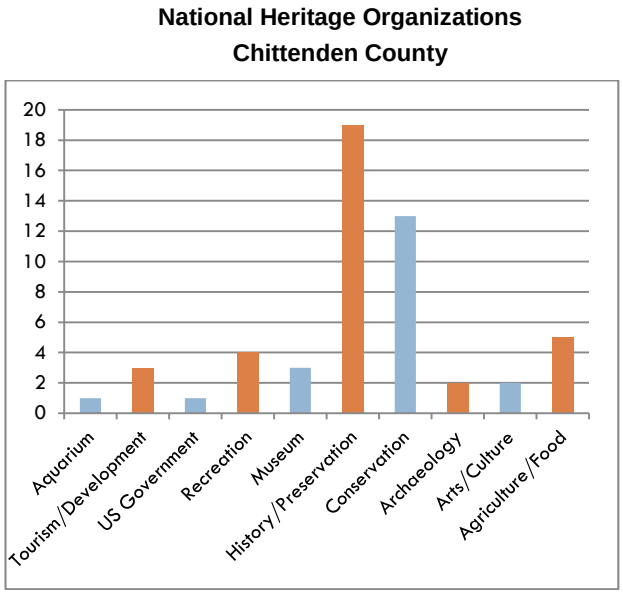
SUB-GOAL 4 - HISTORIC RESOURCES - Respect, preserve, restore, interpret, and make accessible archeological and historic resources.

Key Issue - Why this is important

- Archeological and historic resources are important not only because they help define the region's identity and contribute to our quality of life, but also because they may perform important present-day functions and promote tourism.

Key Indicators - How are we doing?





Source: Champlain Valley National Heritage Partnership Management Plan

Other/Supporting Indicators

- **Number of historic and archaeological sites**
- **Acres of historic and archaeological sites**
- **Number of visitors at historic sites**.

HOUSING

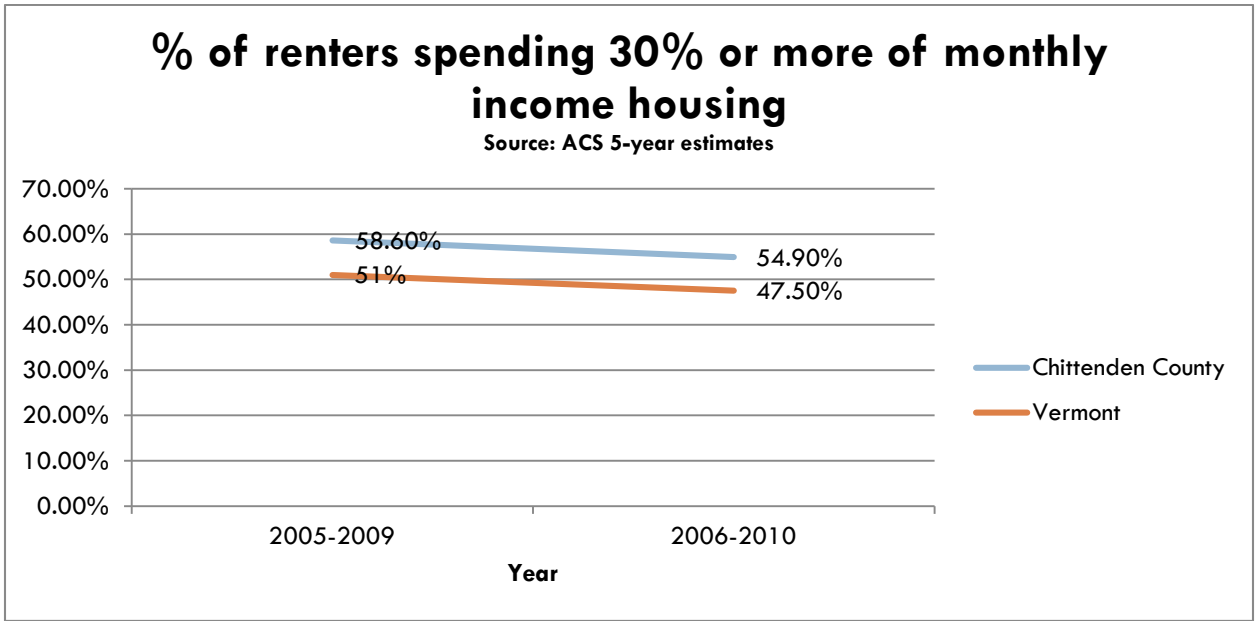
Goal: Increase the opportunities for safe, decent, energy efficient, affordable, accessible and fair housing for all types of households in diverse neighborhoods.

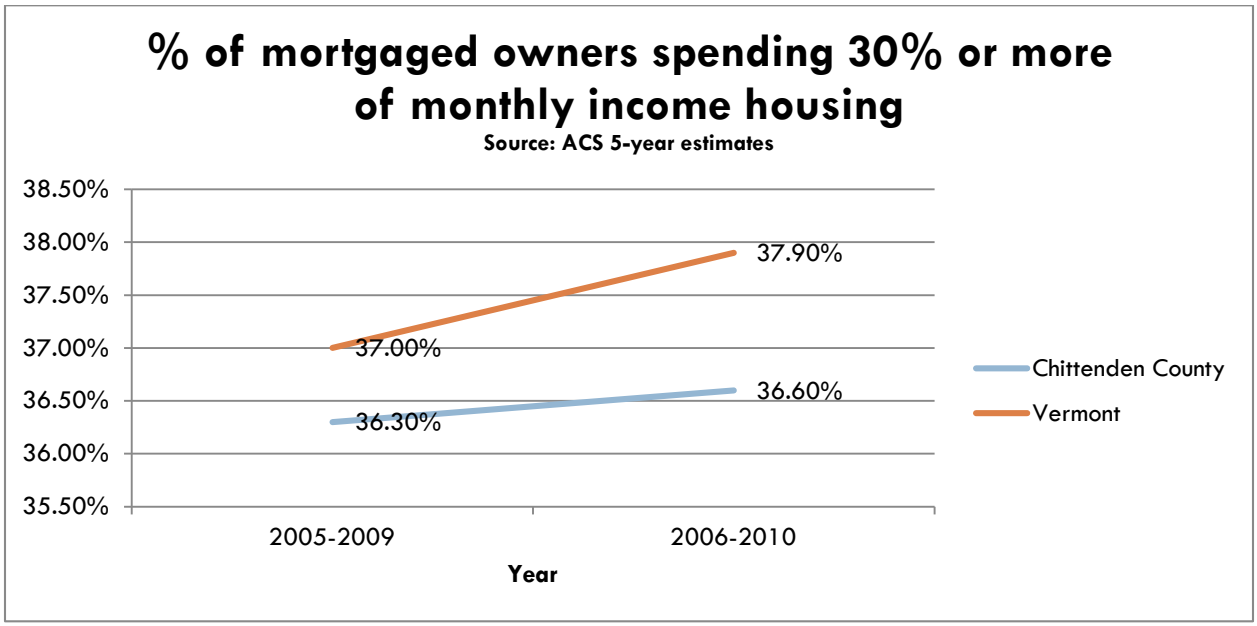
Key Issue - Why this is important

- Adequate and affordable housing is central to a sustainable community. A healthy community is made up of households with a variety of incomes and affordable housing is needed to satisfy residents' wide range of needs. Lack of affordable housing contributes to many social stresses, including homelessness.
- The financial burden of paying a mortgage, homeowners insurance, property taxes, utility expenses and other housing fees is unaffordable when they consume more than 30% of the household's income. Further, paying more than half of income on housing expenses creates a severe strain on a household's budget; and these households are at much higher risk of foreclosure, eviction, homelessness, and frequent moving—all of which harm residents and the community. Approximately 4,000 owner households and 6,000 renter households living in Chittenden County pay more than half of their incomes for housing expenses.
- Some Chittenden County residents do not have equal access to housing opportunities in Chittenden County. The county's growing population of non-White residents, residents with disabilities, and single-parent families are more likely to experience poverty and less likely to become homeowners than other types of households. The availability of sufficient housing options for all residents, regardless of their race, disability status, or membership in other protected classes, ensures that residents have an opportunity to reach their potential as contributing community members.
- Nearly 60% of the county's housing stock was built before 1980—when lead-based paint was widely used, most home insulating, heating and energy technology was inefficient, and building and accessibility codes did not yet accommodate all types of residents.
- More than 11% of Chittenden County residents commute 25 or more miles to work—with potential adverse effects on both the health of the driver and the environment. In addition, with the exception of some neighborhoods in Burlington and Winooski and a few other blocks in the county, the vast majority of the county's working residents pay more than 45% of their income for the combined cost of housing and transportation.
- The county's population is expected to continue growing, albeit at a slower pace than in the past decade. Between 2010 and 2015, demand for additional owner homes is likely to be lower than prior levels of home building in the county. However, demand for renter homes is predicted to increase. Tools to ensure adequate housing supply for renters include renovation and conversion of existing buildings as well as new construction.

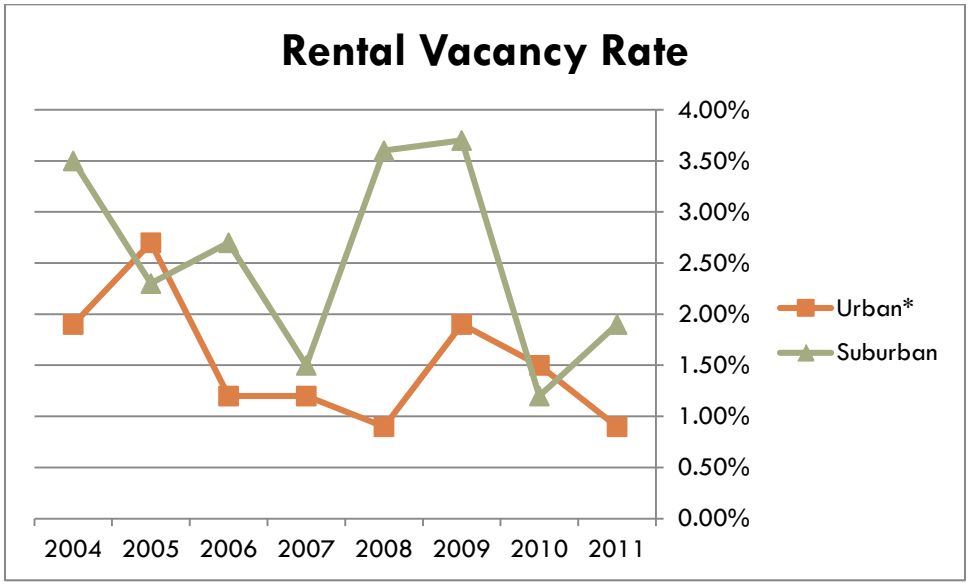
Key Indicators - How are we doing?

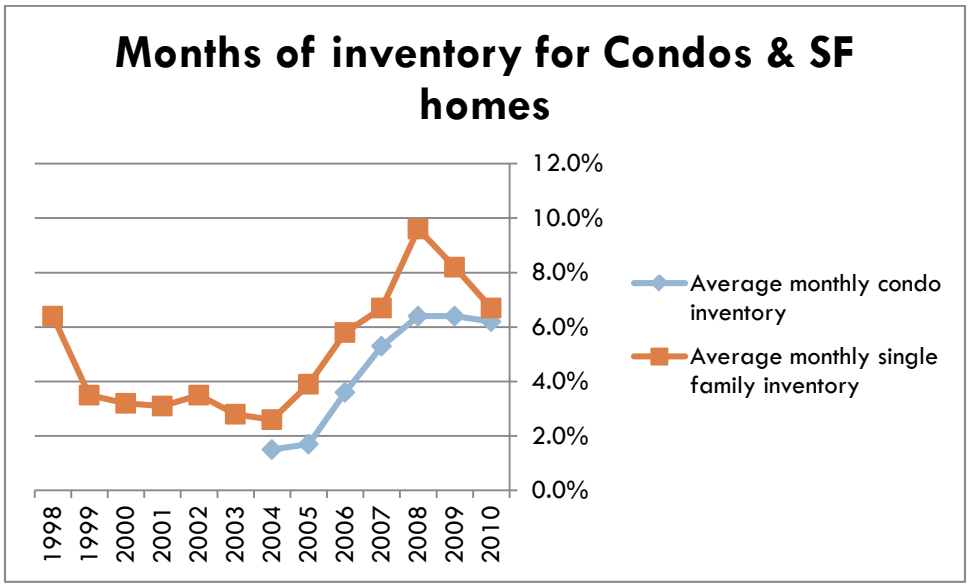
- **% households spending over 30% of income on housing expenses (owners and renters).**





- **Metro and non-metro vacancy rate for renters and owners**. Note: For rental data, Urban is defined as Burlington and Winooski. Target: set threshold of 10%. Source: VHFA Allen and Brook report. Why: Low vacancy drives up costs, too much vacancy signals other market issues both results signal further exploration.



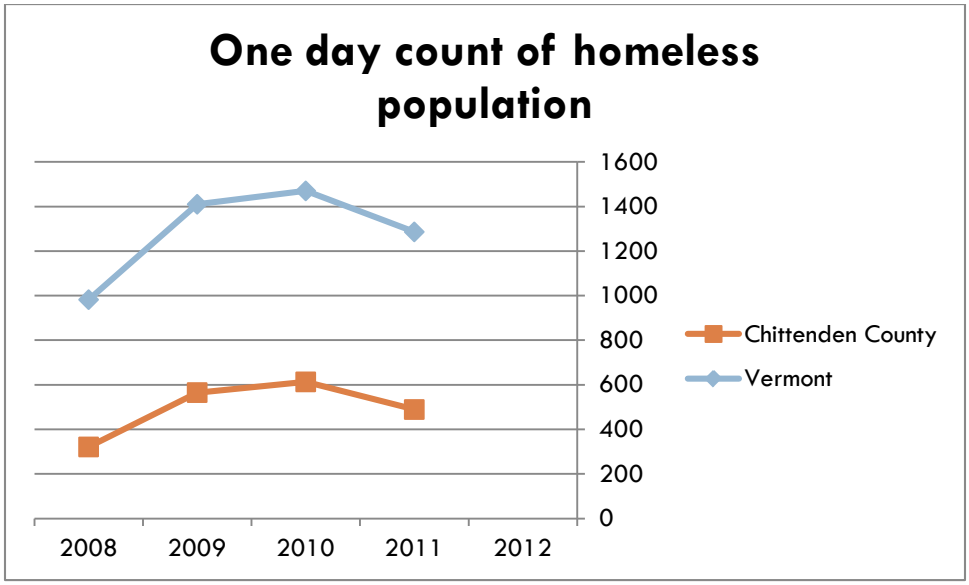


- **# of housing units and average assessed value of each unit by zoning district or Planning Area**. Source: Spatial analysis of geographic distribution and assessed value of housing stock. Source: UVM Spatial Lab, CCRPC Why: This indicator will map housing clusters and their value to show affordability and density in proximity to town centers.

Other/Supporting Indicators

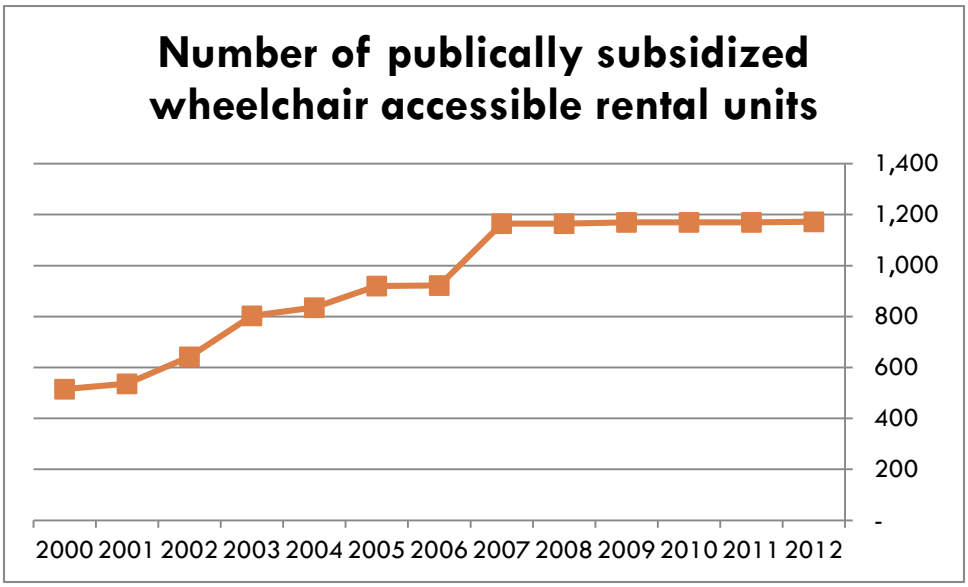
- **Homeownership rate by race** – a measure of access to homeownership

- **# of homeless at point in time count (PIT).** Source: Chittenden County Continuum of Care (Burlington CEDO)



- **# of new housing units by tenure (rental and ownership) mapped with Planning Areas** (Data Source: CCRPC, e911 points)

- Accessibility: **Number of publically subsidized wheelchair accessible rental units**. Data Source: VHFA.



Data Gaps and Further Analysis to be Done:

- **Length of Time on Choices for Care waiting list.** This may not be available for Chittenden County and may not be very useful because it only represents a single organization working on a very specific issue.

- **Number of homes that complete the Home Performance with Energy Star Program through Efficiency Vermont or Vermont Gas**. The state has a goal of weatherizing 80,000 homes by 2020, currently only 8-10,000 have been weatherized.

- **% of income spent on energy and utility costs**. Source: This data does not appear to be readily available. One way to calculate this number would be to determine household average spending on energy, number of working people per household and average income.

Performance Measures of Strategies:

- **% of municipalities with inclusionary zoning bylaws.** Source: CCRPC

TRANSPORTATION

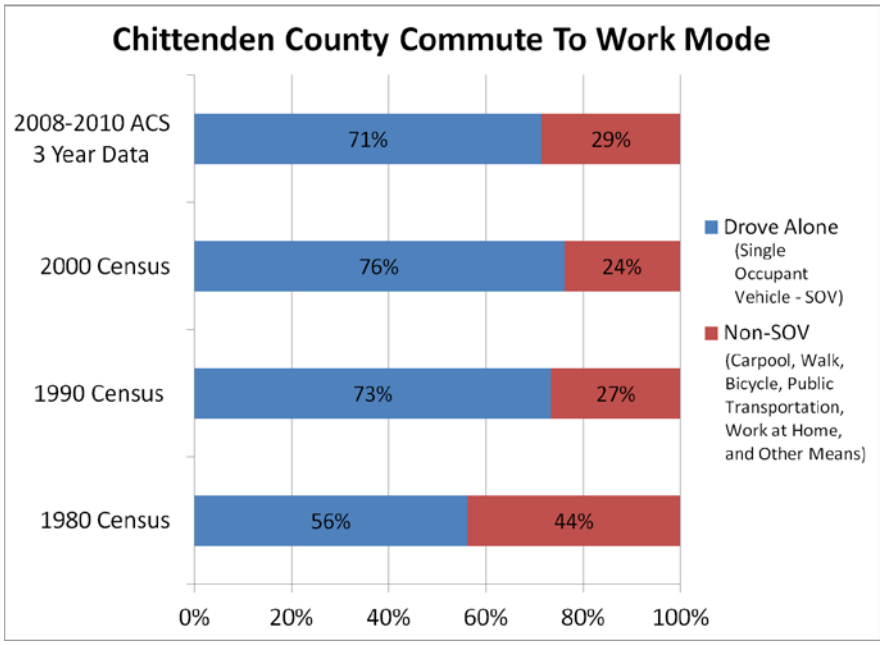
Goal: Provide accessible, safe, efficient, interconnected, secure, equitable and sustainable mobility choices for our region's businesses, residents and visitors.

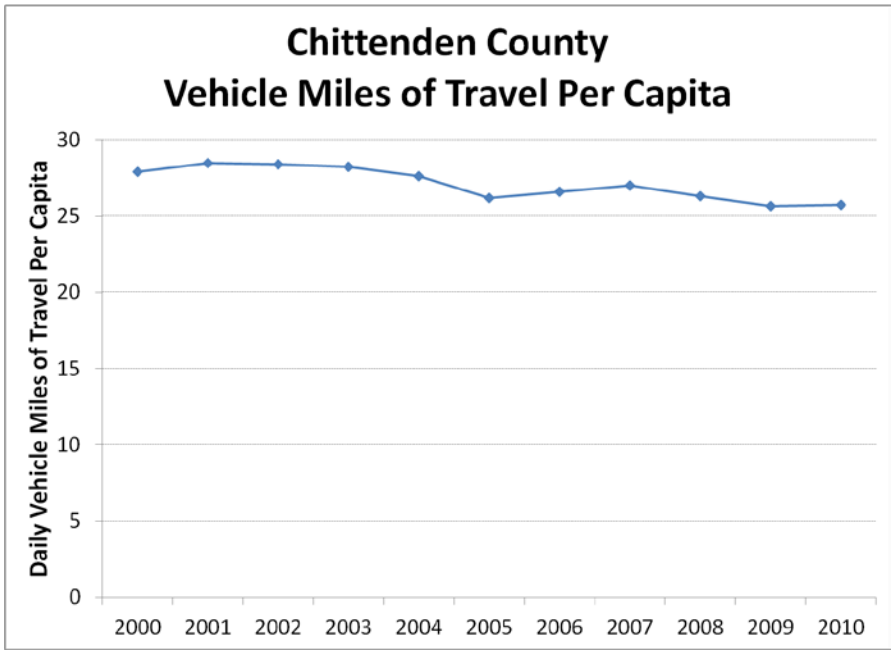
Key Issues - Why do we care? What is the problem?

- Congestion is worsening with potential negative consequences on economic development, the environment and human health.
- Higher fuel prices will lead to an increase in the percentage of household income needed to meet transportation expenses.
- Continued low density development in rural areas will increase Vehicle Miles Traveled (VMT) and likely increase potentially harmful air pollutants and greenhouse gases.
- The lack of safe, reliable, and complete connections within the transportation system and between transport modes, reduces access to employment, social, economic, and recreation opportunities; and limits access to basic needs by means other than a personal vehicle.
- More robust investment in transportation options – transit, walking/biking, Carshare and rideshare – could reduce social exclusion, improve public health, and enhance the economic well-being of our residents, businesses and visitors.
- While access to public transit is widely available in the region's more urbanized areas, there are some suburban and rural populations lacking that mobility option.
- Roadway condition of over half of the arterial highway mileage in Chittenden County is rated poor or worse.
- Transportation costs exceed our capacity to maintain, operate, and improve our current system.
- Some population segments – youth, the elderly, minorities, refugees, the poor – lack access to viable public and private transportation options.

Key Indicators - How are we doing?

- **Percent of workers commuting by non-Single Occupant Vehicle (SOV) mode (walk, bike, transit, carpool, telecommute).** Recent data suggests the reversal of a negative trend going back at least 30 years and probably longer. See chart on next page.
- **VMT Per Capita.** Less driving per person can have positive environmental, transportation, economic, health and social impacts. Out most recent data may portend a positive trend. See chart on next page.





- **Adequate Infrastructure Maintenance Investment Ratio** = amount your city/state/region is spending on infrastructure repair relative to the amount of use of your infrastructure in need of repair or replacement (measured by category: bridges, roads, transit, etc.) (requested by Partnership for Sustainable Communities)

Other/Supporting Indicators

Accessibility & Equity

- **Share of housing and employment in CCTA service area (¼ mile of transit route)**
- **Percent of households paying more than 45% of household income on transportation and housing**
- **Percent of low income/minority/disabled/auto-less/over aged 65 households within ¼ mile of a transit route, sidewalk or bike path/lane**

Safety & Security

- **Vehicle crash rate per annual vehicle miles traveled (VMT)**
- **Number of reported pedestrian and bicycle crashes per capita**
- **Miles of sidewalks and shared use paths per roadway mile**

Efficiency & Interconnectivity

- **Transit passengers per service hour**
- **Reduction in Vehicle Hours of Travel per capita**
- **Number of intermodal nodes serving two or more travel modes**

Sustainability

- **Share of TIP funding for system preservation**
- **Volume of transportation related Green House Gas (GHG) emissions per household**
- **Transit operating costs per passenger mile**

Secondary Indicators/Further Analysis to be Done:

- **Share of housing and employment within ¼ mile of sidewalk, bike path or bike lane**
- **Number of ADA transportation related capital improvements**
- **Increase in membership, service area and fleet of CarShare VT**
- **Numbers and percent of households and businesses with broadband access.**
- **Number of intersections converted to roundabouts**
- **Number of new energy efficient street lights**
- **Number of projects to remedy High Crash Locations (HCL)**
- **Annual miles of repaved Federal Aid System roadway**
- **Number of participants in bicycle safety training programs**
- **Number of students in schools enrolled in the Safe Routes to School (K-8) program**
- **Number of pedestrian signal/crossing improvements**
- **Percent of Transportation Improvement Program (TIP) funding for transit, walking and biking**
- **Percent of new housing within ¼ mile of a transit route**
- **Increase in transit service linking disadvantaged populations to employment centers**

- **Number of trips provided by SSTA**
- **New connecting road between other through roads**
- **Number of employees enrolled in Transportation Demand Management programs**
- **Number of employers offering TDM programs**
- **Percent change in overall vehicle fleet fuel efficiency**
- **Corridor Intelligent Transportation Systems (ITS) projects**
- **Reduction in average work commute trip length**
- **Congested Vehicle Miles of Travel – VMT on congested roads**
- **Percent of workers who work from home**
- **Ozone measurements from Vermont state monitoring station**
- **Energy used per passenger mile of travel**

ENERGY

SUB-GOAL 1 ENERGY CONSUMPTION - Reduce energy consumption through energy conservation and efficiency.

Key Issue - Why this is important

- Energy consumption in Chittenden County shows an overall increase in total energy usage in parallel to the population growth that the county has been experiencing. Trends vary by fuel type and sector (residential, commercial and industrial, and transportation).

- The per household or per employee energy consumption for several fuel types has shown a decline over the last 20 years, consistent with improvement in efficiency and more stringent standards.

Key Indicators - How are we doing?

- **Annual electric savings (MWh and MW) by sector and location.** Source: http://www.efficiencyvermont.com/about_us/energy_initiatives/vt_town_energy.aspx
- **Annual natural gas savings (therms).** Source: http://www.vermontgas.com/pdf/VGS%202010%20Annual%20Report.pdf
- **Annual fossil Fuel savings (MMBTU)**
- **Total Energy Savings.** Source: VEIC and Vermont Gas.

	2009	2010
Electricity Savings - Efficiency Vermont (MWh)	25,406	
Natural Gas Savings - Vermont Gas (MCF)	62,000	82,151
Total MMBTU of energy savings	148,685	82,151

- **Percent of Energy Saved through Efficiency:**

Total Energy Use	16,986,063
Total Energy Savings	148,685
	0.88%

Other/Supporting Indicators

- **Total resource benefits of programs** (value of energy efficiency programs in dollars). Total Resource Benefits is the value of avoided costs for electricity, fossil fuel net savings, and water savings that accrue from electric and gas energy efficiency measures installed. Source: Efficiency Vermont, Burlington Electric, Vermont Gas.

	Total Resource benefits (2010)
Efficiency Vermont	$ 131,600,000
Burlington Electric	$ 6,977,270
Vermont Gas	tbd

- **Total Energy Use.** Source: VEIC

	Total MMBTU consumption					
	Electricity	**Fuel Oil**	**Natural Gas**	**Wood**	**Propane**	**Total**
Residential and C&I	4,119,579	3,572,372	7,214,790	749,256	1,090,425	16,986,063
	Efficiency Vermont Town level data (2009)	Estimated using statewide EIA data (2009)	Vermont Gas Town Level data (2010)	Estimated using statewide EIA data (2009)	Estimated using statewide EIA data (2009)	

For final draft 2010 MWh data will be available

SUB-GOAL 2 RENEWABLE & DISTRIBUTED ENERGY– Encourage the generation of renewable energy sources that are distributed and produced in an environmentally responsible manner.

Key Issue - Why this is important

- Fossil fuel combustion increases the atmospheric concentration of carbon dioxide and other greenhouse gases, which are the causes of global climate change.
- Climate change will have profound impacts on the environment, public health, infrastructure and the economy.
- The outflow of energy dollars serves as a drain on the state and Chittenden County's economy.

Key Indicators - How are we doing?

- **Number and capacity of sites that generate energy with -photovoltaics - hydropower - solar thermal/hot water - biomass - wind located in Chittenden County**. Source: http://www.vtenergyatlas.com/

Oct. 12, 2011	# of sites	Capacity (kW)	Capacity (Thousand Btu)	Tons of wood consumed
Solar Photovoltaics	297	6101		
Solar Thermal	42		2975	
Combined systems	12	86	588	
Wind	28	491		
Hydro	6			
Wood Thermal[1]	9			3900
Wood Electric [2]	1	50000		665760

1 Thermal capacity not recorded, only tons of wood consumed as a proxy for system size is available
2 McNeil Power Plant

- **% of electricity generated by renewables not owned by utilities**. Source: http://www.vtenergyatlas.com/. Data downloaded on Oct 12, 2011.

Chittenden County Estimated kWh private renewable generation from solar and wind (MWh)	667
2009 Chittenden County Electricity Use (MWh)	1,074,097
Private renewable electricity as a percent of Chittenden county use	0.06%

Other/Supporting Indicators

- **Total renewable energy as a % of total energy used/% of SPEED Goal Achieved.**

In May 2009, Vermont enacted the Vermont Energy Act, which requires all Vermont retail electricity providers to purchase electricity generated by eligible renewable energy facilities through the Sustainably Priced Energy Enterprise Development (SPEED) Program via long-term contracts with fixed standard offer rates. This policy, commonly known as a "feed-in tariff," is intended to provide a reasonable return on investment to renewable energy facility developers, thereby spurring deployment of renewable energy. SPEED also establishes the goal of 20% by 2017 of Vermont retail electric sales supplied by renewable energy. Part of the legislation required that the DPS assess the progress toward the 20% goal. The data from the progress report is presented below. The privately owned renewable energy projects are not included in these numbers.

Vermont annual electric retail sales (MWh)	5,515,810
Annual MWh of SPEED Resources, operational	330,086
Annual MWh of SPEED Resources, with certificate of public good	335,223
Annual MWh of renewable electricity purchased by utilities from out of state resources	258,373
Total SPEED Resources	923,682
SPEED resources that are either built or permitted as a percent of Vermont's statewide electric retail	16.70%

Performance Measures of Strategies:

- **% of residents enrolled in the PACE program**. Source: http://pacevermont.wikispaces.com/Updates

Number of Chittenden County towns that adopted PACE enabling legislation	2
Number of towns implementing PACE	0
Number of households covered by legislation	17809

- **# of renewable energy jobs**. Note: Data table is available. Source: http://www.brookings.edu/metro/Clean_Economy.aspx
- **Financial incentives available for installing new renewable energy generation equipment**. Source: Vermont Small-Scale Renewable Energy Incentive Program Funding. Incentives available in 2012 = $2,800,000.
- **# of towns implementing actions called for in the Energy element of their comprehensive plans.** Source: CCRPC data would need to be collected**.**

SUB-GOAL 3 ENERGY PRODUCTION, TRANSMISSION, & DISTRIBUTION- Maintain and develop energy production, transmission, and distribution infrastructure in Chittenden County that is efficient, reliable, cost-effective, and environmentally responsible.

Key Issue - Why this is important

- Reliable, cost effective and environmentally sustainable energy availability is critical to support the economy and households in Chittenden County.
- Currently, reliability and cost are good in Chittenden County relative to New England. However, there are some constrained substations in Chittenden County. It will be beneficial to work with electric utility customers to reduce their demand in order to defer substation upgrades.

Key Indicators - How are we doing?

Note: Electric Rates vary greatly and don't tell you very much. The rest of these indicators are more useful, however most of this data would need to be produced.

- **Electricity Reliability – power outages**. Source: Data is not currently collected. Electricity providers would need to be surveyed.
- **Line efficiency**. Line losses quantify the energy lost when transporting electricity from generation to the end user. VEIC assumes 10% however that has not been verified. Possible sources are VELCO and DPS I was unable to quickly locate a source for this number.
- **Efficiency savings from geo-targeting**. During 2012-2014, Efficiency Vermont is going develop special programs to target electric utility customers to reduce their demand in order to defer substation upgrades. This process is still in process so goals have not been set.
- **Vermont Fuel Prices vs. Demand**. Total Energy Costs. Source: VT Energy Plan. Not sure if this can be disaggregated for the County.
- **% of income spent on energy and utility costs.** This is listed under the Housing Goal.

Data Gaps and Future Analysis to be Done:

- **Cost-effectiveness** – Price paid by utilities to customers for distributed generation vs. prices paid on the regional market.

INFRASTRUCTURE

SUB-GOAL 1 PUBLIC WATER SUPPLY - Ensure adequate public water supply within service areas.

Key Issue - Why this is important

- An adequate water supply is needed to accommodate existing residential and business customers as well as future users in areas planned for growth.
- The majority of the residents in the County get their drinking water from Lake Champlain, via two utilities: the Champlain Water District (CWD) and the City of Burlington's DPW Water Division. In addition, Richmond, Hinesburg, Underhill and Jericho have smaller public water supply utilities.
- Both Champlain Water District (CWD) and the City of Burlington's DPW Water Division utilities have received Phase III Director's Awards from the USEPA's Partnership for Safe Water Program, and Champlain Water District was the first in the United States to receive the Phase IV Excellence in Water Treatment Award in 1999, and is one of 11 in the US to presently maintain this award status following required annual reviews. While the quality and quantity of our water supply is not a challenge, the treatment and infrastructure is not without cost.

Key Indicators - How are we doing?

- **Current Capacity v. Capacity Needed for Growth Projections in Service Areas**. Source: Water Utilities and Municipal Growth Projections. Data exists, it just needs to be collected. Include a map of the service areas.

Data: Champlain Water District has a reliable capacity of up to 20 MGD (million gallons per day). CWD is presently averaging just over 9 MGD, with peak demands at 13.5 MGD. Therefore CWD has approximately 6.5 MGD reserve capacity based on present peak day demands. The average home uses 200 gallons per day, so 6.5 MGD would equate to approximately 32,500 future new homes in the CWD county service area.

The City of Burlington has a capacity of up to 7.5 MGD. Burlington's excess capacity at peak is 1.3 MGD. The average home uses 200 gallons per day (assuming CWD's average), so 1.3 MGD would equate to approximately 6,500 future new homes in the Burlington service area.

Richmond, Hinesburg, Underhill and Jericho – data to be collected.

NOTE: Excess capacity is required for water treatment facilities to allow for maintenance. The required volume of excess capacity will vary from facility to facility given a number of local parameters. This reserve capacity must be calculated from the peak day and not the average day to be valid.

Other Supporting Indicators

- **Per Capita Water Use**. Include with a regional benchmark and/or VEIC's standard for an efficient house. Source: Water Utilities and VEIC
- **Water Rates Per Capita**. Source: Water Utilities
- **Municipal Dollars in public investment in Water Supply**. Source: Data would need to be gathered. Likely reported in Municipal Annual Reports and Utility Annual Reports.

SUB-GOAL 2 PUBLIC WASTEWATER - Ensure adequate infrastructure for wastewater treatment in areas planned for growth and service areas

Key Issue - Why this is important

- Adequate waste water capacity is needed to accommodate infill and redevelopment in areas planned for growth. Public waste water capacity is often a limiting factor to growth and is therefore encouraged in areas planned for growth, and discouraged in the Rural Planning Areas (unless needed for public health reasons).
- Currently, there are 11 municipal wastewater treatment plants in the County; together they have a treatment capacity of 19.05 million gallons per day (MGD) (Source: State of Vermont Wastewater Treatment Plant permits). As of 2000, CCRPC estimated an aggregate reserve capacity of 3.7 MGD. Attention must be paid to available capacity to support areas planned for growth.
- Our water bodies provide important habitat for a range of aquatic life, birds, and other wildlife in addition to having recreational, commercial and industrial uses. These water bodies are also the receiving environment for effluent from waste water treatment plants. The Water Quality section in the Natural Systems section deals with the quality of the treated water. Maintaining compliance with Vermont Water Quality Standards is necessary.

Key Indicators - How are we doing?

- **Current Capacity v. Capacity Needed for Growth Projections in Areas Planned for Growth**

Source: Waste Water Utilities (CCRPC will update) and Municipal Growth Projections. Data exists, it just needs to be collected. Include a map of the service areas.

Other Supporting Indicators

- **Waste Water Rates Per Capita**. Source: Waste Water Utilities
- **Municipal Dollars in public investment in Waste Water management**. Source: Data would need to be gathered. Likely reported in Municipal Annual Reports.
- **Total Wastewater phosphorus load, by lake segment watershed**. Source: ANR, Lake Champlain TMDL. Data available now and annually.

Data Gaps and Future Analysis to be Done:

- **Net Energy Recovered. Essex Junction WWTP does this. Efficiency Improvements in WWTP upgrades, kWh saved and monetary benefits**. Source: VEIC is looking to see if this type of report can be obtained.

Cross reference note: Impairments and phosphorus load indicators are located under the Water Quality goal in the Natural Systems section.

SUB-GOAL 3 STORMWATER - Manage storm water runoff affordably and effectively.

Key Issue - Why this is important

When precipitation falls to the earth and accumulates more rapidly than it can be absorbed into the ground, it flows across the earth's surface and becomes part of the surface-water system (streams, rivers, ponds, and lakes). Stormwater runoff occurs when the intensity and duration of rainfall and snowmelt exceed the earth's capacity to absorb water. That is, runoff results from a combination of the amount of precipitation and the character of groundcover. Because there is little we can do to alter the frequency of storms, we attempt to control stormwater by managing the character of groundcover and by intercepting and controlling runoff. Because impervious and hardened surfaces (such as rooftops, streets, and parking lots) tend to prevent water from percolating into the ground, it is important to limit impervious surfaces by concentrating it in the areas planned for growth.

- Effective storm water management is a result of both regional development patterns and site specific strategies. "The EPA examined storm water runoff from different development densities to determine the comparative difference between scenarios. The higher-density scenarios generated less storm water runoff per house at all scales and time series build-out examples" (*Protecting Water Resources with Higher-Density Development*. EPA, Publication # 231-R-16-001). Therefore, high-density residential development concentrated in areas planned for growth will produce less storm water runoff (than a low-density development pattern) and will allow us the opportunity for more efficient management of that runoff.
- Site specific storm water can be managed in a variety of ways; Low Impact Development (LID), Green Infrastructure, and Environmental Site Design (ESD) (sometimes referred to as Better Site Design) are a few strategies.
- Storm water management is regulated via the National Pollutant Discharge Elimination System (NPDES) permits. Permits are issued for individual sites, and for Municipally Separate Storm Sewer Systems (MS4). MS4s essentially include all systems designed or used by a public entity for collecting or conveying stormwater. In Chittenden County, nine municipalities and three public entities are subject to MS4 permitting: Burlington, Colchester, Essex, Essex Junction, Milton, Shelburne, South Burlington, Williston, Winooski, Burlington International Airport, UVM and VTrans.
- Our water bodies provide important habitat for a range of aquatic life, birds, and other wildlife in addition to having recreational, commercial and industrial uses. These water bodies are also the receiving environment for storm runoff from urbanized and agricultural areas. The Water Quality section in the Natural Systems section deals with the quality of the treated water. Maintaining compliance with Vermont Water Quality Standards is necessary.

Key Indicators - How are we doing?

- **% of impervious area that is under storm water management**. Source: ANR, TMDL. Total Impervious area is being developed using remote sensing/GIS analysis. Data may be available in approx 1 month. Then on approx 5 year intervals.
- **# acres of impervious surface by planning area**. Source CCRPC. Data would need to be developed. Could be done with the State's data mentioned above.

Other Supporting Indicators

- **% of land area in stormwater impaired watersheds in need of treatment that is receiving treatment**. Source: ANR, TMDL. Data not available yet. Intending to start in 2015 and will be reported annually.
- **Municipal Dollars in public investment in Storm Water management**. Source: Data would need to be gathered. Likely reported in MS4 Annual Reports.

Data Gaps and Future Analysis to be Done:

- **# acres of impervious surface by planning area**
- **% of land area in stormwater impaired watersheds in need of treatment that is receiving treatment**

Cross reference note: Impairments and phosphorus load indicators are located under the Water Quality goal in the Natural Systems section.

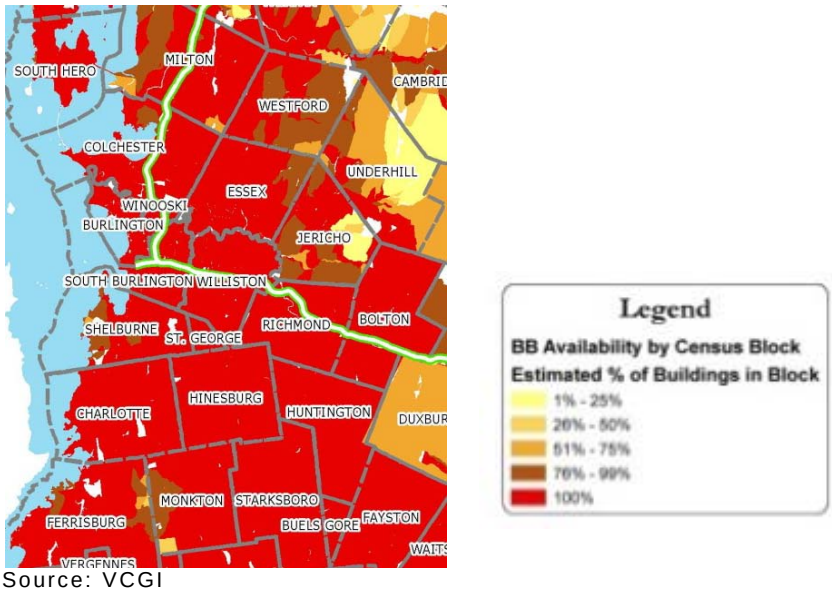
SUB-GOAL 4 COMMUNICATIONS– Ensure equal access to appropriate and affordable communication services for all.

Key Issue - Why this is important

- The quality and cost of advance telecommunications (voice/data) services are on par with urban service availability and pricing.
- While, Chittenden County has the strongest telecommunications network in the state, there is room for improvement and the services must continue to improve. Service levels available to homes and businesses, access and affordability must continue to expand in order to support other goals of the ECOS project. As measures of economic development, social capital and overall health begin to include access and affordability of applications and the devices that enable them, Chittenden County has an opportunity for leadership within the state.
- Because Chittenden County is the most heavily developed part of the state in terms of both population and business there is a particular focus on upgrading telecommunications in the

County. While, the County already has a significant fiber optic capability (some currently dark) with many businesses already having T-1 capability, the technology is constantly improving and we must keep up. It will be important to ensure that we are on par with other urban areas in the realm of number of service providers, service tiers, and affordability.

Key Indicators - How are we doing?



Source: VCGI

- **In 2007, 89% of buildings are within 500' of a public street serviced by cable and 86% of building are within a DSY coverage area.** Data will be updated, 2011 data is now available.

Other/Supporting Indicators:

Data Gaps and Future Analysis to be Done:

- **Household Income v. Broadband Access/Use.** Source: ?
- **Broadband speed**
- **# of Public Internet Access Spots**

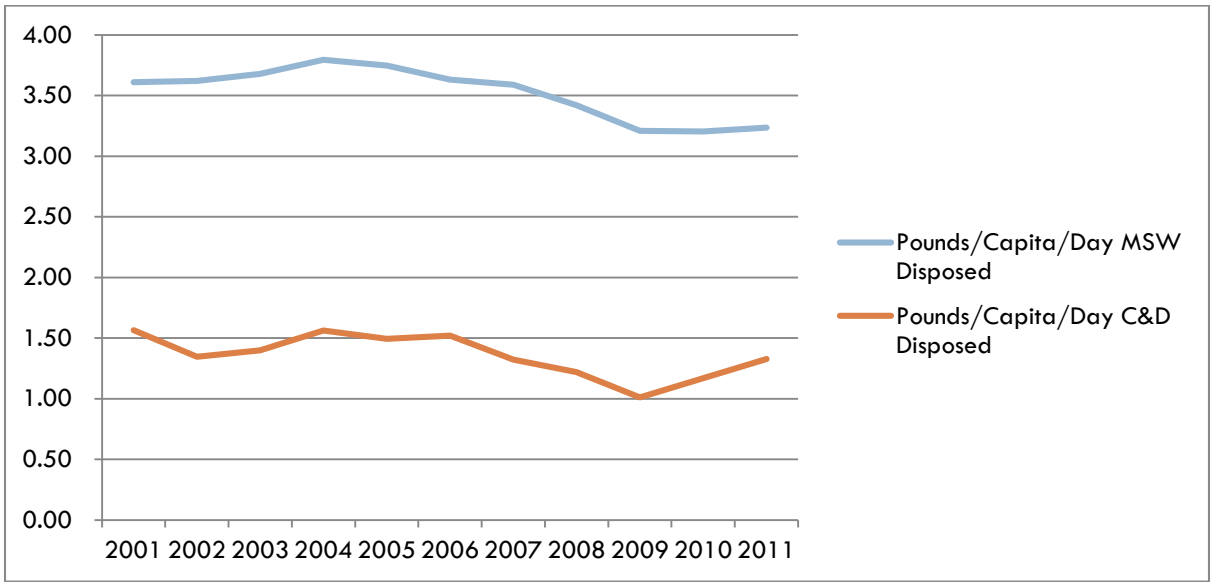
SUB-GOAL 5 WASTE REDUCTION - Decrease materials consumption and increase the use of renewable resources, resource recovery and recycling.

Key Issue - Why this is important

- A sustainable society minimizes the amount of waste it generates. It uses materials efficiently-investing in products and services that can be used over and over again instead of being used up. Recycling can limit the amount that gets buried in landfills or incinerated.
- Tons of refuse disposed in Chittenden County has been declining over the last 5 years, while the amount of recycled materials has increased. We would like to see these trends continue in this same direction.
- Some of the challenges in reducing disposal of materials and increasing diversion of materials include the lack of recycling markets for many materials, the need for continuing education, an inconvenient residential composting collection system, and inadequate incentives for many people. In addition, the current solid waste collection system is inefficient and results in higher costs and emissions of pollutants as well as greater wear and tear on roads than in a consolidated collection system.
- CSWD only accepts a new material for recycling when there is more than one stable market for it and if the location of the market makes economic and environmental sense (i.e. depending on the material, it may not make sense to ship to California or to international destinations). Because of population turnover, particularly in Burlington, it is challenging to keep residents educated on what can and can't be recycled here. In addition, it is estimated that 27% of the municipal solid waste sent to the landfill is comprised of recyclable materials and 32% is comprised of organic materials that could be composted (Source: *CSWD Estimate of the Components of Solid Waste Disposed for FY 2011*). There is very limited curbside pickup for residential organics, and if you don't have a place to compost in your yard, you may not want to collect it. Organics can be delivered to CSWD drop-off centers, but this is not convenient for most households. Organics collection for businesses and institutions is available, but many organizations do not participate for a variety of reasons (e.g., extra time required, need for training, high staff turnover rate, the "yuk" factor). Greater incentives are and/or a more convenient program is needed to increase participation in composting. Additional incentives, such as unit-based trash rates, would help increase diversion of recyclables. Finally, there are many haulers serving the same streets and picking up once a week when trash bins may not be full. Having haulers designated to specific routes and picking up trash once every two weeks may increase efficiency.

Key Indicators - How are we doing?

- **Pounds of Waste Disposed/Capita/Day for MSW (Municipal Solid Waste) and C&D (Construction Debris).**



Source: Chittenden Solid Waste District, Waste Diversion Report: Calendar Years 2001-2011

Other/Supporting Indicators

- **Recovery Rate of Mandatory Recyclables**

ESTIMATED CSWD RECOVERY RATE FOR ZY RECYCLABLES – FY 2011

Source of Recyclables	Total Recycled	Residential	Commercial
Curbside Processors	25,993	14,661	11,332
Other Processors	7,053	0	7,053
Bottle Bill	4,755	2,805	1,950
Add. Economic	4,717	0	4,717
TOTAL	42,518	17,467	25,052

Sector	MSW Disposed	% MSW Recyclables	Recyclables Disposed	Recyclables Diverted	Recovery Rate	Recovery w/o Bottle Bill Material
Residential	51,424	16.5%	8,485	17,467	67.3%	63.3%
Commercial*	42,074	26.1%	10,981	25,052	69.5%	67.8%
TOTAL	93,498	20.8%	19,466	42,518	68.6%	66.0%

*Estimated percent commercial recyclables landfilled from 2001 State Study.
Source: Chittenden Solid Waste District. This data is collected and reported annually.

HAZARD MITIGATION

Goal: Reduce the loss of life and property from natural and manmade hazards.

Key Issue - Why this is important

- As identified by the 2011 *Chittenden County Multi-Jurisdictional All Hazards Mitigation Plan,* the highest ranked county-wide hazards are severe winter storm, flooding, telecommunications failure, power loss, major transportation incident, fluvial erosion and epidemic. Three of the top hazards are natural hazards, three are technological hazards, and one is a societal hazard.
- Flooding and fluvial erosion can damage or destroy homes, businesses and transportation infrastructure.
- Winter storms, flooding, transportation incidents and epidemics can cause human injury, illnesses and even death.
- Winter storms, telecommunications failure, power loss and transportation incidents can cause serious disruption of public safety services.
- Flooding, fluvial erosion and possibly epidemics may be made worse by projected climate changes.

Key Indicators - How are we doing?

NOTE: Key indicators for this goal are difficult due to the broad nature of this goal and the lack of comprehensive and reliable data sources for losses. Indicators should focus on strategies that will reduce losses.

- **% and number of structures in special flood hazard areas in Chittenden County** (based on GIS analysis). Source: CCRPC and/or State NFIP. Data: 1.5% of structures or 866 structures out of 58,598 structures are within the Special Flood Hazard Area and Fluvial Erosion Hazard Area in 2012.

Performance Measures for Strategies:

- **% and number of municipalities with designated fluvial erosion hazard areas.** Source: CCRPC and/or State NFIP.
- **% and number of municipalities participating in the National Flood Insurance Program.** Source: State NFIP. Data: 16 or 84% of municipalities participate in the National Flood Insurance Program
- **Annual investment in hazard mitigation projects**. Source: CCRPC, Hazard Mitigation Plan Annexes.
- **% of Municipalities that include Climate Change Adaptation measures within their Town Plans and Bylaws**. Source: Municipal Plans and Bylaws. NOTE: this will be a place holder until we have more specific indicators to include from the Climate Action Plan. This may largely overlap with hazard mitigation projects.

Data Gaps and Further Analysis to be Done:

- **Annual deaths from weather related hazards.**
- **Annual property damage in dollars from weather related hazards.** Data would need to be collected, and will likely not be complete.

Economic Infrastructure

Broad Goal: Build the region's capacity for shared and sustainable improvements in the economic well being of the community through support of both local and globally competitive initiatives.

The more prosperous an economy, the better off the residents of that economy are in terms of opportunities to gain a higher income, purchase needed items and access quality health care. In general, this leads to greater social connectedness, educational advancement, wider employment options and increased life expectancy.

ECONOMY

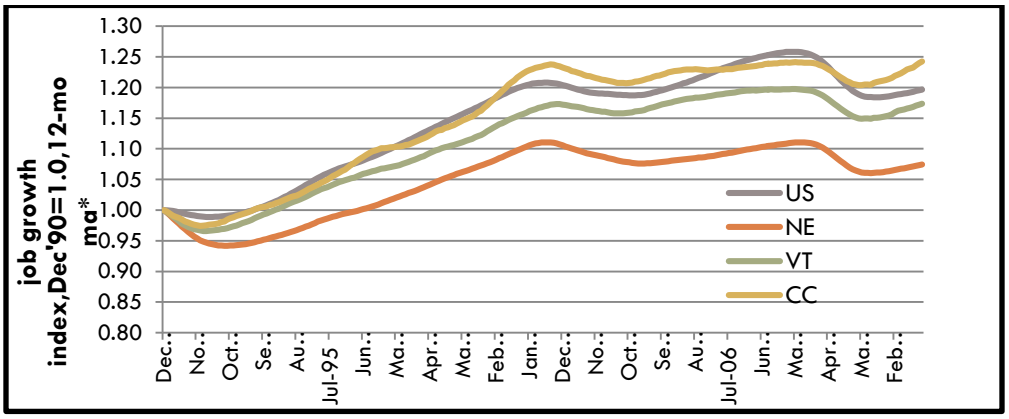
SUB-GOAL 1 - EMPLOYMENT- Retain and support existing employers and jobs.

Key Issue - Why this is important

- Retention and development of employers and jobs in Chittenden County increase wages and prosperity
- Employment in the private sector declined between 2000 and 2010. This was offset in part by an increase in public sector employment, but it was not sufficient to offset private sector losses (private sector: -4,386 + public sector: 2,263 = net -2,123).
- Unemployment statistics are complicated because of under-employment, those that have given up on looking for employment, and access to the online system or language barriers (New Americans have reported this being an issue).

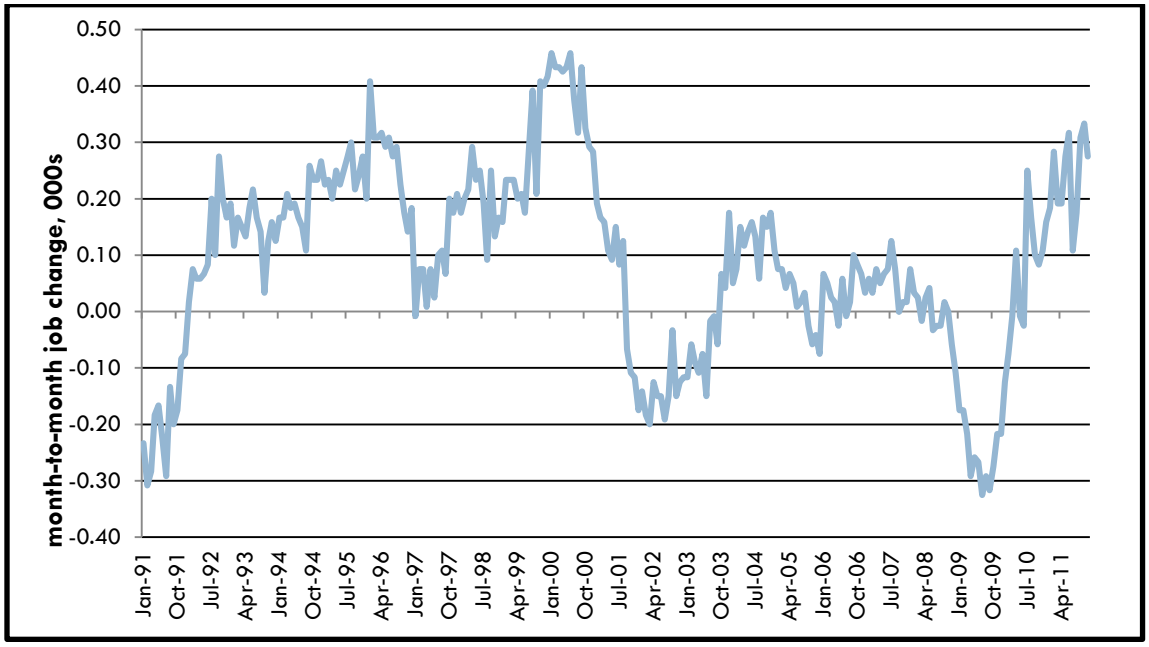
Key Indicators - How are we doing?

- Employment - **Recent Chittenden County job growth has been stronger than the U.S., New England and Vermont.**



* 12 month moving average, Source: Boston Federal Reserve, Bureau of Labor Statistics

- Month to month job growth - **Although still below the 2000 peak, job growth in the County has improved since 2009:Q3**

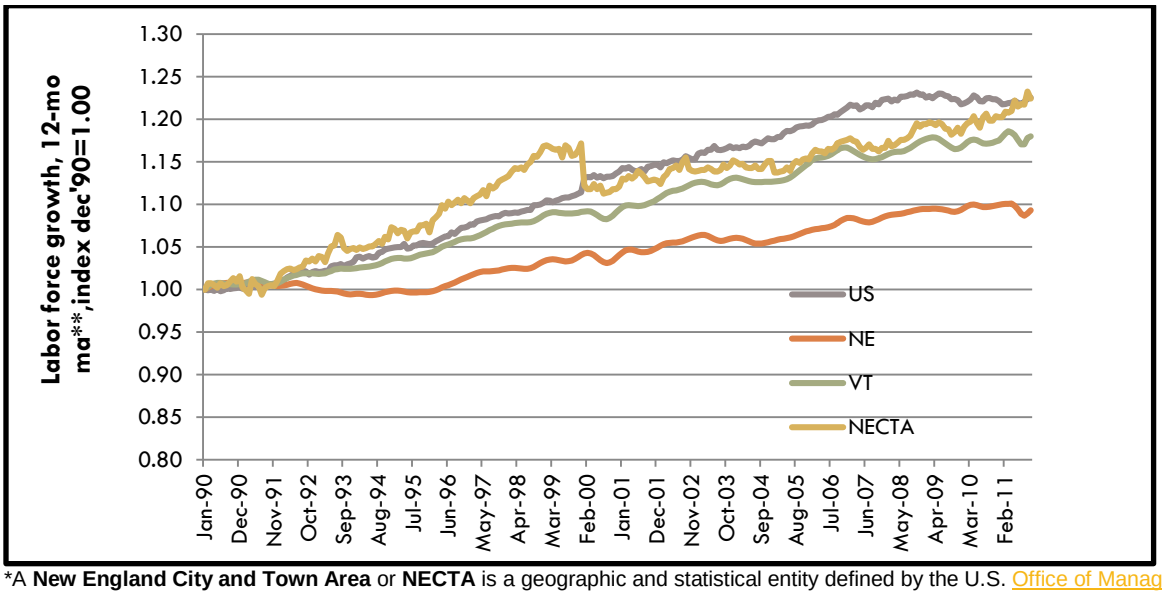


Source: Bureau of Labor Statistics

- Total number of businesses in Chittenden County: **Since peaking in 2008 the County's business count has dropped by 101**

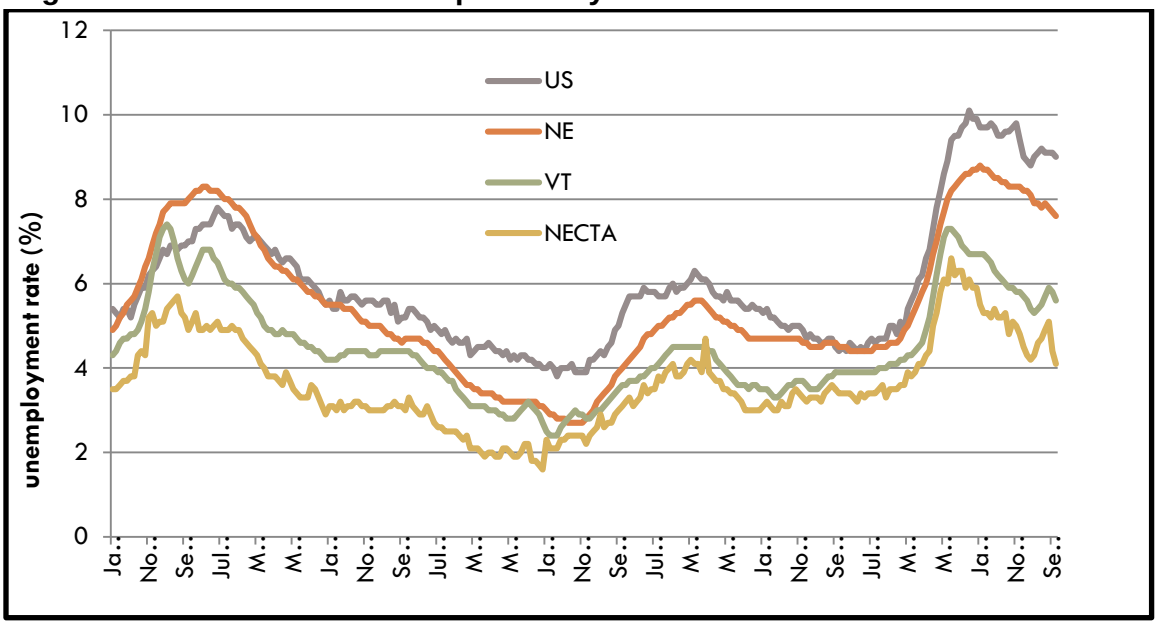
Source: Vermont Department of Labor

- Labor force - **Labor force growth in the Burlington NECTA* has surpassed the U.S. in the past year.**



*A **New England City and Town Area** or **NECTA** is a geographic and statistical entity defined by the U.S. Office of Management and Budget, for use in describing aspects of the New England region.
** 12 month moving average
Source: Boston Federal Reserve

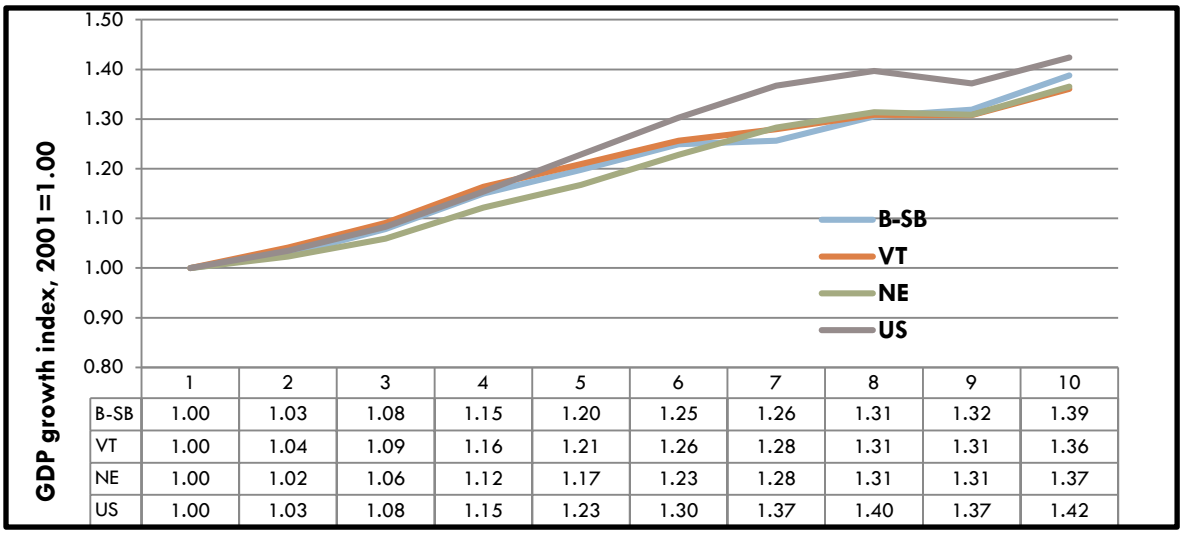
- **The unemployment rate in the Burlington NECTA* has declined faster than the New England and US rates over the past two years.**



*A **New England City and Town Area** or **NECTA** is a geographic and statistical entity defined by the U.S. Office of Management and Budget, for use in describing aspects of the New England region.
** 12 month moving average
Source: Boston Federal Reserve

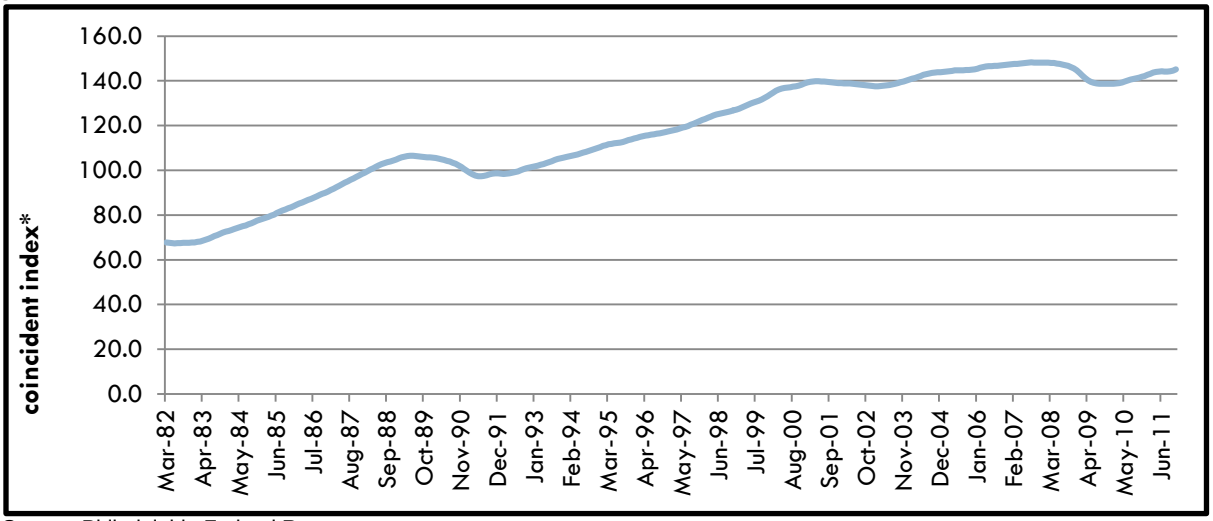
- **Disaggregate unemployment by race**

- **Gross Domestic Product - GDP growth tracks closely in the MSA, the State and in New England but lags the US** (2001-2010)



	1	2	3	4	5	6	7	8	9	10
B-SB	1.00	1.03	1.08	1.15	1.20	1.25	1.26	1.31	1.32	1.39
VT	1.00	1.04	1.09	1.16	1.21	1.26	1.28	1.31	1.31	1.36
NE	1.00	1.02	1.06	1.12	1.17	1.23	1.28	1.31	1.31	1.37
US	1.00	1.03	1.08	1.15	1.23	1.30	1.37	1.40	1.37	1.42

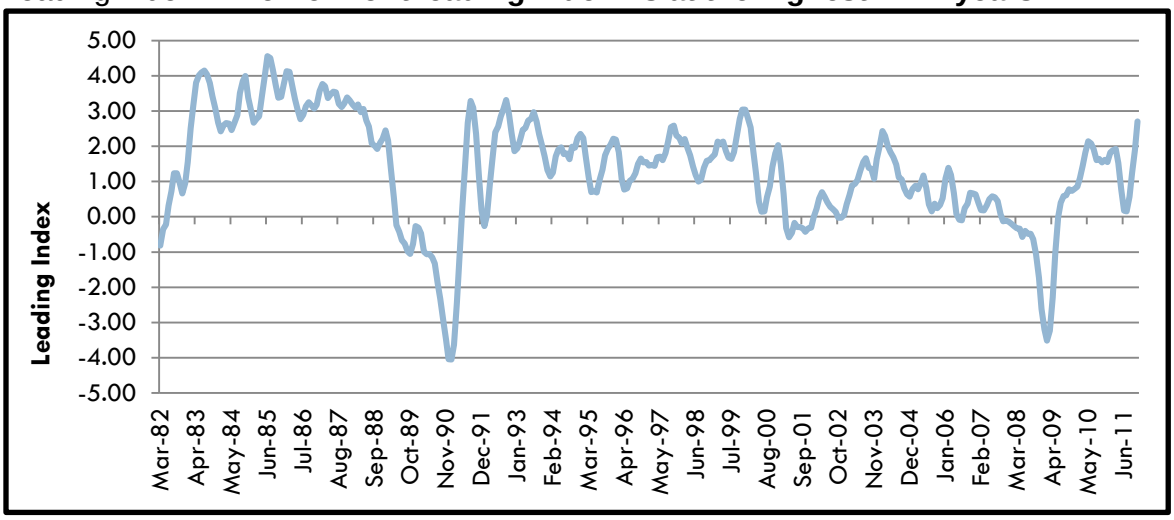
- **Coincident Index - Current economic conditions in Vermont are the best in three years.**



Source: Philadelphia Federal Reserve

*A coincident index is a single summary statistic that tracks the current state of the economy. The index is computed from a number of data series that move systematically with overall economic conditions. MORE EXPLANATION NEEDED OR DELETE

- Leading Index - **The Vermont leading index* is at the highest in 12 years**



Source: Philadelphia Federal Reserve

*The leading index for each state predicts the six-month growth rate of the state's coincident index. MORE EXPLANATION NEEDED OR DELETE

SUB-GOAL 2 - EMPLOYER CLUSTERS - Increase and support the development and recruitment of existing and new target sector employers and jobs.

Key Issues - Why this is Important

- Local economies based on a limited number of industries, type of operation, or clusters are at risk if short-term or structural changes impact the economic base. A healthy economy will be diverse, offering a variety of types of jobs and job structures in a cross-section of industries, clusters and operational types. Chittenden County's economic base is currently very diverse. This diversity must continue.
- Chittenden County's total employment base is largely (68%) within six industry sectors: healthcare and social assistance; educational services retail trade; manufacturing; accommodation and food service; and professional, scientific and technical services.
- A review of the location quotients of Chittenden County show those subsectors in which employment concentrations are above national averages, thereby showing a comparative industry advantage for employment and skill availability.
- However, 46% of manufacturing employment is within one company (IBM)
- More focus in needed on education and workforce development to train employees for the opportunities in the technologies needed for manufacturing, professional services and health care. See more under the "Knowledge and Skills" topic.

Key Indicators - How are we doing?

➢ Largest Industry Sectors - **Employ 68% of total in Chittenden County (Need to fill-in data)**

Industry Sector	Employment	Employers	Total Wages	Avg Wage
Health care and social assistance	14,060			
Educational services *	11,239			
Manufacturing	10,744			
Professional, scientific & technical services	6,725			
Total	63,003			

Source: U.S. Bureau of Labor Statistics, Quarterly Census of Employment & Wages, 2010
*Includes local and state government employment

➢ Location Quotients - **The number of subsectors with high location quotients shows a diversified employment base that offers opportunities for continued economic diversification and a broad base on which the County's economy can flourish.**

Industrial Category and 3 Digit NAICS Code *	Location Quotient (US=1.00)
NAICS 334 Computer and electronic product manufacturing	6.63
NAICS 454 Nonstore retailers	2.65
NAICS 339 Miscellaneous manufacturing	2.07

NAICS 451 Sporting goods, hobby, book and music stores	1.95
NAICS 515 Broadcasting, except internet	1.91
NAICS 453 Miscellaneous store retailers	1.78
NAICS 323 Printing and related support activities	1.65
NAICS 492 Couriers and messengers	1.51
NAICS 442 Furniture and home furnishings stores	1.50
NAICS 448 Clothing and clothing accessories stores	1.46
NAICS 621 Ambulatory health care services	1.40
NAICS 445 Food and beverage stores	1.35
NAICS 447 Gasoline stations	1.33
NAICS 562 Waste management and remediation services	1.28
NAICS 541 Professional and technical services	1.23
NAICS 332 Fabricated metal product manufacturing	1.17
NAICS 517 Telecommunications	1.16
NAICS 611 Educational services	1.14
NAICS 441 Motor vehicle and parts dealers	1.12
NAICS 444 Building material and garden supply stores	1.11
NAICS 236 Construction of buildings	1.10
NAICS 511 Publishing industries, except internet	1.10
NAICS 624 Social assistance	1.10
NAICS 238 Specialty trade contractors	1.07
NAICS 333 Machinery manufacturing	1.05
NAICS 335 Electrical equipment and appliance mfg.	1.05
NAICS 721 Accommodation	1.05
NAICS 813 Membership associations and organizations	1.04
NAICS 443 Electronics and appliance stores	1.01
NAICS 532 Rental and leasing services	1.00
NAICS 713 Amusements, gambling, and recreation	1.00

Source: U.S. Bureau of Labor Statistics, Quarterly Census of Employment & Wages, 2010
* Includes only industries with Location Quotients over 1.00

- **Number of net new jobs by target industry sector (data being acquired)**
  - **Number of net new companies in target sectors**

SUB-GOAL 3 - ENTREPRENEURSHIP- Increase local business ownership and entrepreneurial activities.

Key Issues - Why this is Important

- Local entrepreneurs fuel the local economy
- Entrepreneurial development is a core characteristic of the area, and needs to be nurtured.

Key Indicators - How are we doing?

- **Number of new business filings per year**
- **Patents**

Other/Supporting Indicators

- **Number of post-secondary science and engineering students (primary data collection needed)**
- **Value of goods and services exported (primary data collection needed)**
- **Gross licensing revenue from commercialized university research (primary data collection needed)**
- **Number of locally owned banks (primary data collection needed)**

Performance Measures of Strategies:

- 10 businesses in Chittenden County are at least partially employee-owned; 30 businesses in Vermont are at least partially employee-owned and employ over 3000 people. Source: VEOC
- Total dollars loaned through community based lending programs (if available)
- SBDC Consults
- Total $'s awarded in SBIR and STIR Grants (?)

SUB- GOAL 4 - ECONOMIC DIVERSITY - Improve economic diversity.

Key Issue – Why this is important

- Maintain economic diversity, and deepen existing sectors, seek even greater diversity.
- The number of subsectors with high location quotients shows a diversified employment base that offers opportunities for continued economic diversification and a broad base on which the County's economy can flourish.

Key Indicators - How are we doing?

➢ **Employment by Major Industry Sector 2010***

NAICS Code	Industry sector	Chittenden County	Vermont	U.S.
Private Sector		83.3%	82.0%	83.5%
62----	**Health care and social assistance**	**15.1%**	**15.9%**	**12.7%**
44----	**Retail trade**	**13.5%**	**12.9%**	**11.4%**
31----	**Manufacturing**	**11.5%**	**10.5%**	**9.0%**
72----	Accommodation & food services	8.2%	9.7%	8.7%
54----	**Professional, scientific & technical services**	**7.2%**	**4.6%**	**5.9%**
23----	**Construction**	**4.5%**	**4.6%**	**4.3%**
56----	Admin, support, waste mgt, remediation services	3.4%	3.0%	5.8%
42----	Wholesale trade	3.4%	3.2%	4.3%
52----	Finance & insurance	3.4%	3.0%	4.3%
81----	Other services (except public administration)	2.9%	2.9%	3.4%
51----	**Information**	**2.3%**	**1.8%**	**2.1%**
48----	Transportation & warehousing	2.2%	2.2%	3.1%
61----	**Educational services**	**2.2%**	**3.2%**	**1.9%**
71----	**Arts, entertainment & recreation**	**1.6%**	**1.3%**	**1.5%**
53----	Real estate & rental & leasing	1.2%	1.0%	1.5%
55----	Management of companies & enterprises	0.3%	0.3%	1.5%
22----	Utilities	0.3%	0.6%	0.4%
11----	Forestry, fishing, hunting, and agriculture support	0.1%	0.9%	0.9%
21----	Mining	0.0%	0.2%	0.5%
Government Sector		**16.7%**	**18.0%**	**16.5%**

Source: U.S. Bureau of Labor Statistics, Quarterly Census of Employment & Wages
*__Bold__ indicate industry sectors for which Chittenden County employment percentages exceed the U.S. average. Data excludes members of armed forces, self-employed, proprietors, domestic workers, unpaid family members and railroad workers covered by the railroad unemployment systems

Other/Supporting Indicators

➢ **Percent of total wages by business sector**

SUB- GOAL 5 - WORKPLACE DIVERSITY - Improve employer and employee workplace diversity.

Key Issues - Why this is Important

- The more we take advantage of the strength of our community's diversity the stronger and more resilient our economy will be in the future.

Key Indicators - How are we doing?

- **Total Employment Participation Rate in Private Industry by race & gender – 7% minority, 48% women**
- **Wages by race and gender**
- **Median age of workforce by occupation**
- **Women-owned firms in 2007 in Chittenden County = 28.2%, VT= 26%**
- **Minority owned firms in Chittenden County**

SUB- GOAL 6 - ECONOMIC DEVELOPMENT LOCATION - Provide land and building capacity for employment supported with adequate infrastructure in town centers, villages and other areas planned for development.

Key Issues - Why this is Important

Chittenden County has a good inventory of available buildings or partial space in buildings, with 388 buildings totaling nearly 2.9 million square feet.

- Chittenden County is currently modestly-supplied with land for business construction
- Chittenden County is well-served with a highway network that facilitates multi-directional, but will decline unless investments are made.
- The County is generally well-served with utilities and telecommunications services necessary to support economic development, but could improve the quality and costs of telecommunications, in particular cell phone service.

Key Indicators - How are we doing?

- **Location of available land (zoning) and space in comparison to the Planning Areas (areas planned for growth) (Add map)**
- **Available Building Space or Vacancy Rates in Chittenden County**
- **Land Available in Chittenden County Business Parks**

Other/Supporting Indicators

- **Amount of non-residential building square footage permitted in areas planned for growth**
- **Percent of land zoned for potential non-residential development in areas planned for growth**
- **Net build-out capacity of non-residentially zoned land in areas planned for growth**
- **Average time spent commuting to work**

Performance Measures of Strategies:

- **Percent and $ of transportation investment in CC made in areas planned for growth**

HOUSEHOLD FINANCIAL SECURITY

Goal: Improve the financial security of households.

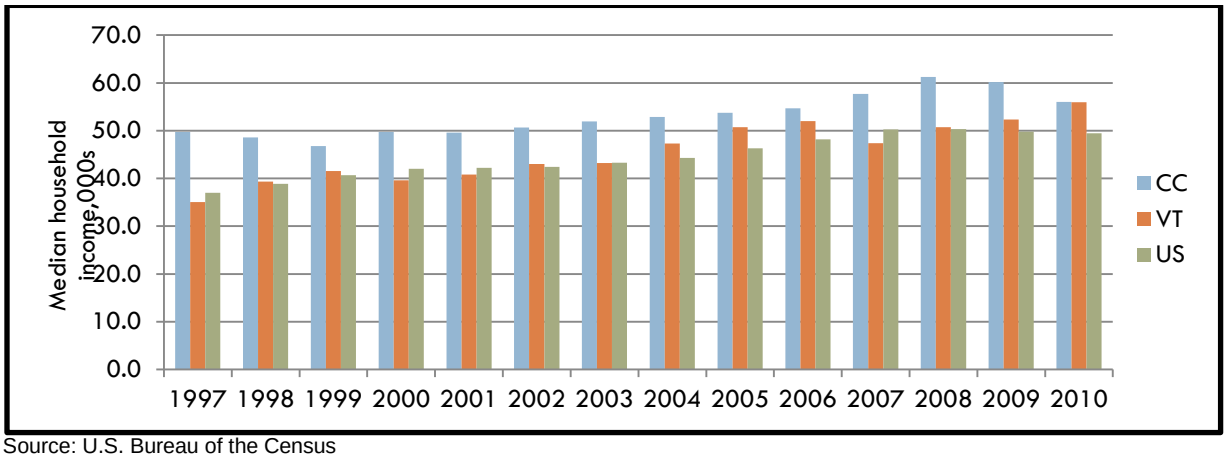
- Levels of income and wealth are key determinates of individual or family wellbeing. Economic standard of living involves a complex combination of factors such as income, living costs, and household size and composition.
- The more prosperous an economy, the better off the residents of that economy are in terms of opportunities to gain a higher income, buy material possessions and access quality health care. In general, this leads to greater social connectedness, educational advancement, wider employment options and increased life expectancy.

Key Issues - Why this is Important

- Levels of income and wealth are key determinates of individual or family wellbeing. Economic standard of living involves a complex combination of factors such as income, living costs, and household size and composition.
- In 2008, 21% of Chittenden County residents were living at less than 200% of the federal poverty level, many receive state and federal assistance to meet basic needs
- Lower income Vermonters report higher rates of depression and chronic conditions, such as obesity, asthma, heart disease, stroke and diabetes.

Key Indicators - How are we doing?

➢ **Median household income in the County has declined for two consecutive years.**



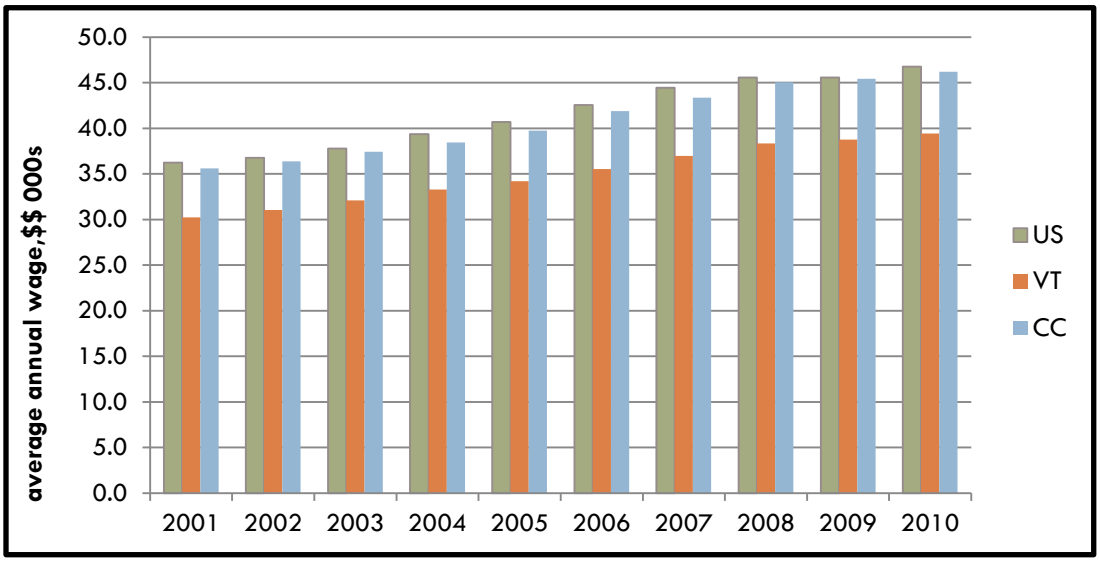
Source: U.S. Bureau of the Census

➢ **Household income by race**

- **# of households in poverty.** Source: U.S. Census Bureau, American Community Survey

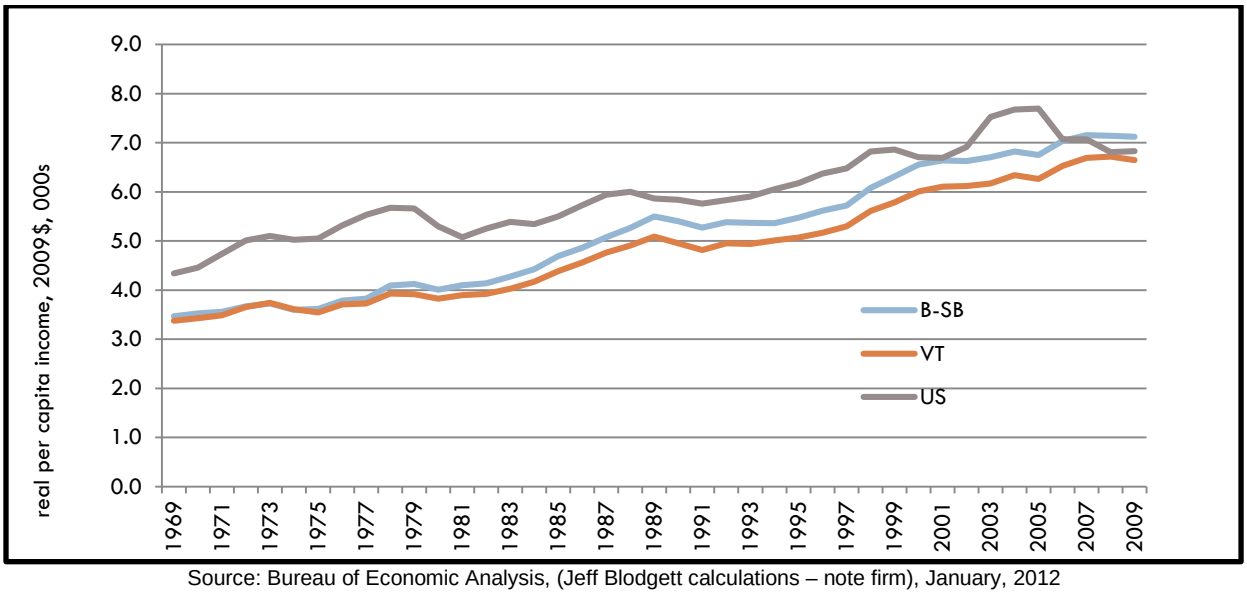
	Percentage of Families whose Income in the Last 12 Months is Below Poverty Level	
	ACS 2007 3-year Estimates	ACS 2010 3-year Estimates
Chittenden County	6.10%	6.70%
Vermont	6.90%	7.60%

- **Average wage in the County is higher than the State.**



Source: Bureau of Economic Analysis

- **Real per capita income in the Burlington-So. Burlington MSA now exceeds the US**



Source: Bureau of Economic Analysis, (Jeff Blodgett calculations – note firm), January, 2012

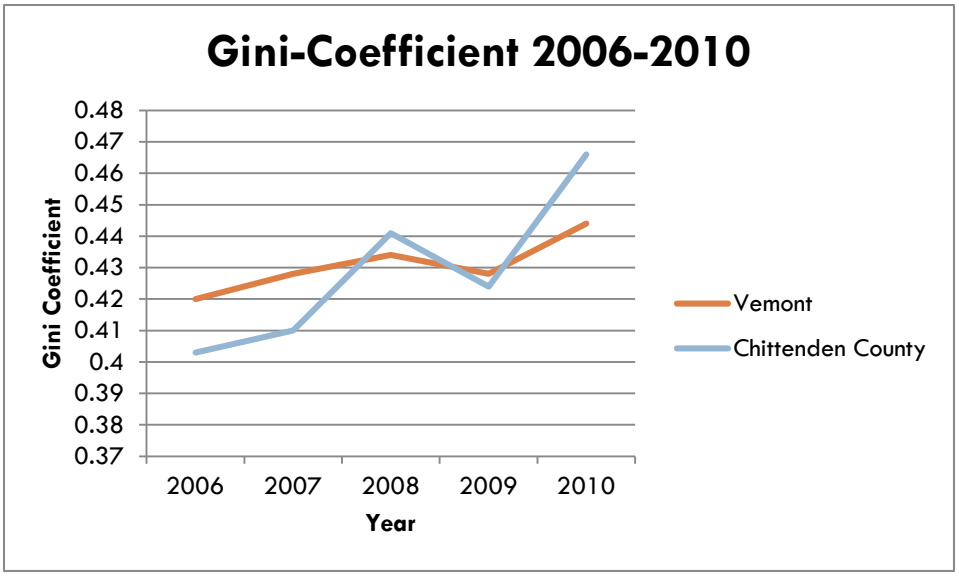
- **Combined Housing + Transportation Costs as a proportion of area median income** (derived from the H+T Affordability Index, requested by PSC)
- **Percent of CC households spending more than 45% of monthly income on housing and transportation.** The Center for Neighborhood Technology (CNT) Tool, H+T has been developed as a more complete measure of affordability, accounting for costs of both housing and transportation. This indicator is only calculated for certain portions of Vermont and statewide comparison in not available at this time.

Other/Supporting Indicators

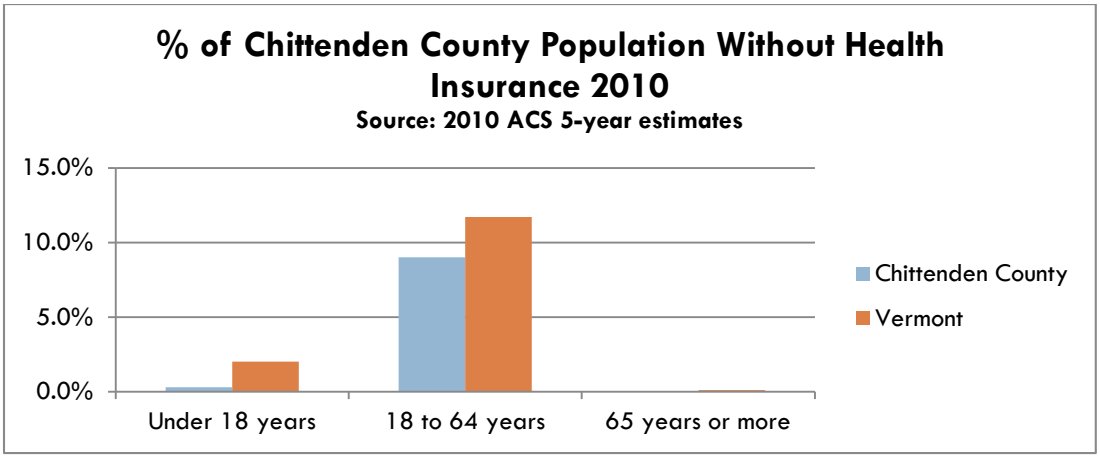
- **Number of underemployed individuals**
- **# of households below poverty level, disaggregate by race** (show on map also)
- **Income inequality** - The richest 20 % of families in Chittenden County have average incomes 6.0 times as large as the poorest 20 % of families. The ratio was 5.2 in the late 80s. The very richest families -top 5% - have average incomes 9.8 times as large as the poorest 20 % of families.
    - The gap between Vermont's richest and poorest families is 42nd largest in the nation.
    - The gap between Vermont's richest families and families in the middle is 41st.

  (Source: ACS and http://www.cbpp.org/files/4-9-08sfp-fact-vt.pdf)

  Gini coefficient. The Gini coefficient is a standard to measure the amount of income inequality in a particular region. The coefficient ranges from 0 to 1, where a coefficient of 0 means that all income is distributed equally, and a coefficient of 1 means all income is held by one household. The Gini coefficient is determined by taking the difference between a straight line equal to complete income equality and a curve describing the distribution of wealth among quintiles of the population. The distance between the straight line and the curve at the farthest point is the Gini value.



- **Percentage of county adult & youth population without health insurance**



Natural Systems

Broad Goal: Design and maintain a strategically planned and managed green infrastructure network composed of natural areas, working lands, wildlife habitat, scenic views and air quality that help to conserve ecosystem values and functions, and provide associated benefits to our community.

A sustainable community preserves natural systems because they offer a richness that nurtures the human spirit as well as protects soil, air and water quality. Healthy landscapes are necessary to sustain the complex myriad of plant and animal species that share our habitat. We are dependent on the surrounding landscapes for many resources such as food, water and wood products; for recreational opportunities and aesthetic values; and for vital natural processes such as water retention and recycling, air cleansing, and nutrient cycling. Protection of our environment also requires us to reduce our waste and clean up our contaminated properties.

These indicators use an ecological systems thinking approach: a multidisciplinary, holistic approach to understanding our natural and built environment, in which we look at the complex relationships between living elements (such as vegetation and soil organisms) and nonliving elements (such as water and air) of a particular area to understand the whole ecosystem. In that same way, we must look beyond our municipal, county and state political boundaries to understand the impacts, both positive and negative, we have on each other. We need to collaborate with each other and adjust our actions in a measured fashion in support of ecosystem health. In order to fully meet the following goals, this strategy will be essential: Improve collaboration with neighboring communities, counties, and state regarding protection of important natural features and environmental systems.

ECOLOGICAL SYSTEMS

SUB-GOAL 1 - HABITATS - Conserve, protect and improve the health of native plant, fish, and wildlife habitats.

Key Issues - Why this is Important

- Chittenden County continues to see forest fragmentation and loss of forest habitat largely due to mounting development pressures. Increasing incidences of land parcelization and subsequent forest conversion, lack of consistent subdivision regulations responsive to wildlife habitat concerns, and construction of transportation infrastructure including roads and trails continue to adversely impact forest integrity. In addition, acid deposition from air pollution, migration of invasive species including destructive insect species, and climate change continues to threaten native forest plant and animal habitat.
- The quality of our land is dependent upon the quality of our water bodies and vice versa. Vermont water bodies continue to face mounting pollution pressures from increased development and agricultural activities. If these trends continue, unabated, the range of

beneficial uses for select water bodies will be further limited. Further impairments could cumulatively have significant consequences for the health, stability and diversity of Vermont's aquatic life, as polluted water bodies become less hospitable to native species. Changes in species composition will have broader implications for the native food chain for both aquatic and terrestrial species.

- In developing the indicators for this goal the ECOS project has used the *Conserving Vermont's Natural Heritage Guide*, Vermont Fish and Wildlife Department and the Agency of Natural Resources, 2004. The Guide identifies the following seven mechanisms by which current development patterns degrade Vermont's natural heritage: 1. direct loss of diversity; 2. destruction of habitat; 3. habitat fragmentation; 4. disruption of movement, migration, and behavior; 5. introduction of invasive exotic species; 6. degradation of water quality and aquatic habitat; and 7. loss of public appreciation for the environment. The ECOS project will monitor these impacts on our ecosystem health; and manage protection efforts using the guidelines established in *Conserving Vermont's Natural Heritage*, Vermont Fish and Wildlife Department and the Agency of Natural Resources, 2004. These guidelines recommend protection of our natural heritage at three levels: landscape level, community level and species level.

Key Indicators - How are we doing?

NOTES Regarding these Habitat Indicators: Ideally we would track indicators that truly tell us something about the quality of the habitats for native plants, fish and wildlife; however, the characteristics that compose a high quality habitat are very specific to each individual species making it difficult to conduct that level of analysis at this scale. With that in mind the ECOS project will monitor the following indicators as they will provide the best picture of habitat conservation with the best available data. Due to the complexity of these indictors they are presented as barometers and should not be used to inform policy changes without further analysis. Data gaps are identified and will be incorporated into the actions/strategies section of the ECOS Plan.

Landscape Level:

CORE HABITAT:

- **Change of Acreage (total acres/block) in Habitat Blocks**. Source: Sorenson, E., Osborne, J. "Vermont Habitat Blocks and Wildlife Corridors: An Analysis using Geographic Information Systems." 2010. Vermont Fish & Wildlife Department. This layer is developed by Vermont Fish and Wildlife based on land cover modeling from NOAA and is updated on a 5-year cycle.

  The functioning of Vermont's forest systems depend greatly on the health of contiguous forest blocks and habitat. Large areas of contiguous habitat not fragmented by roads and development are critical in providing suitable conditions for wide ranging animal species, movement of individuals or populations adapting to climate change, and simply providing space for healthy numbers of plants, animals and natural communities. In an area fragmented by development and agriculture, as is the case with Chittenden County, it is becomes particularly important that these large blocks be maintained in a spatial

arrangement that creates a network allowing for movement of animals and plants between blocks.

These indicators provide a very simplified snapshot of the workings of the habitat blocks. When reviewing changes to these areas over time, habitat blocks will need to be assessed individually and as a network to determine if their functioning has been impacted in ways other than changes in acreage.

- **Average Change in Patch Shape Index (PSI) for Habitat Blocks that Reduce in Size, by Town.** Source: Habitat Block Layer (Sorenson, E., Osborne, J. "Vermont Habitat Blocks and Wildlife Corridors: An Analysis using Geographic Information Systems." 2010. Vermont Fish & Wildlife Department). Analysis would need to be conducted.

  PSI: Patch Shape Index – a measure of the complexity of a shape relative to a circle of a comparable area. A habitat block that is a perfect circle would be a 1.0, a habitat block that is more complex will have a higher score. Because large blocks often have fingers of habitat extending in to the landscape, they may exhibit a high PSI. For this reason a high PSI itself does not reflect how well a block will function. On the other hand for an individual block, if changes in PSI are associated with a reduction in acreage, it may point to fragmentation and reduced functioning in a habitat block. Changes in PSI will likely be more evident in smaller habitat blocks since any change will be proportionally more significant in smaller blocks.

CONNECTIVITY:

- **Total Feet and % Change (of the Total) of Wildlife Crossing Values per Category (1-5)**. Source: Wildlife Crossing Value Layer. This layer is developed by Vermont Fish and Wildlife based on land cover modeling from NOAA and is updated on a 5-year cycle. NOTE: This data layer is largely representative of upland terrestrial habitat; grassland, shrubland, and aquatic habitats are not well represented.
- **Average % Change in Annual Average Daily Traffic for Each Crossing Category**. Source: Wildlife Crossing Value Layer and CCRPC and VTrans.

  One of the major features that fragments the county's blocks of forest are roads. It is necessary for many species to cross roads to find food, shelter, adapt to changing environmental conditions or expand a population. In a few places, good habitat comes close to the road on both sides, increasing the ease with which wildlife gets from one area of forest to another. Maintaining the ability of wildlife to move across roads between areas of suitable habitat is critical for the long-term stability of populations of many species.

  The functioning of these wildlife crossings are also subject to changes in traffic. Some areas that have good crossing conditions on both sides of the road may have high levels of traffic. There may be increased collisions with animals where these conditions intersect, causing the crossing to be a problem for wildlife populations and for motorists.

The Wildlife Crossing Values are based on modeling of conditions that are likely to be conducive to wildlife crossing. This indicator does not distinguish between the relative importance of the crossings. For instance one value-5 crossing may be ecologically more important than another value-5 crossing for certain species, or a value-3 crossing may be more important than a value-5 crossing because of the habitats that are connected by the crossing. For this reason efforts conservation strategies to maintain or enhance crossing conditions should account for the difference in the ecological value of these crossings.

Community and Species Level:

WETLANDS:

- **Total Gain/Loss of Wetlands.** Include # of acres and % of total acreage of new wetlands added to the ANR Wetland Map; # of acres and % of total acreage permitted to be filled (ie. permitted loss); and # of acres proposed to be filled but did not get filled. Source: USGS National Land Cover Data; State Wetlands Map; and State Conditional Use Permits.
- **Total Acreage of Wetlands Restored**. Source: Ducks Unlimited, NRCS, Wetlands Reserve Program.

Mapped wetlands in Chittenden County decreased by approximately 4,954 acres or 1.25% from 1992 to 2006 (USGS National land cover data).

RIPARIAN AND AQUATIC HABITATS:

- **# of Priority Surface Waters/Impaired Waters Occurring in Chittenden County**. Source: State, developed annually. Note: Impaired Waters are also an indicator under the Water Quality goal.
- **Total Length of Stream Segments with Forested Buffer 50, 100 and 330'**. (Recommended by: Steve Fisk of Water Quality, Meg Modley of LCBP, Karen Bates of Water Quality). Source: NOAA Land Cover Layer. Divide streams in to common sized units (possibly based on Stream Order). Buffer streams with length at various widths, select raster units of forest cover by coincidence with buffer layer. Select stream segments that are fully buffered by various distances. Data does not yet exist.

NATURAL COMMUNITIES AND RARE, THREATENED AND ENDANGERED SPECIES:

- **% of Occurrences of RT&E Plants, Animals and Natural Communities on:**

    1. **Conserved Land**: Protected from development by legal measures. By conservation by state, federal or non-profits (includes easements on private land).
    2. **UVA Land**: Enrolled in the UVA program or some other committed, albeit impermanent conservation effort.
    3. **Lands with No Documented Protection**: Otherwise unprotected in any documented way.

Source: Vermont Conserved Public Lands GIS Shapefile (Updated Annually by Vermont Spatial Analysis Lab); Vermont Land Trust, Nature Conservancy, and Local Land Trusts (Likely updated on a rolling basis); Vermont Natural Heritage RTE GIS Shapefile (Vermont Fish and Wildlife,

updated on a rolling basis); Chittenden County UVA enrollment GIS Shapefile (Chittenden County Forester, updated on a rolling basis).

To effectively protect known occurrences of rare plants, animals and natural communities from threats like development it is necessary for conservation efforts to be targeted. A common strategy to protect rare species or communities is to conserve the land where they exist. This indicator attempts to measure the effectiveness of this strategy in Chittenden County.

It should be recognized that the data resulting from these indices will be biased in many ways including:

1. *Conserved lands will often be subject to more intensive inventory work than private lands, so more occurrences of RT&E species may be recognized on conserved lands.*
2. *Some conservation easements may not explicitly afford protection to a known species or community. In these and other instances it should be recognized that threats to documented RTE's or communities may persist even when there is protection from development.*
3. *State lands are often of substantial size, and with natural community mapping, some common communities like Northern Hardwood Forest may be of a size and quality that they are recognized as being of state significance. On most properties natural community mapping has not been completed, and common communities will often not be mapped.*
4. *In the RTE layer, in some instances a species will be known to occur in a habitat but will be mapped as a point. In these instances conservation of the parcel around the point may be insufficient to protect the known population but this will not be clear based on the available mapping.*

Performance Measures of Strategies:

- **% of Municipalities that include language within their Town Plans and Bylaws supporting the conservation of native plant, fish and wildlife habitats**. Source: Wildlife Considerations in Local Planning, VNRC for Chittenden County.

INVASIVE SPECIES:

- **Number of Invasive Non-native Aquatic Species**. Source: State of the Lake and Ecosystem Indicators Report - 2008, Lake Champlain Basin Program.

In 2008 there were 48 known aquatic invasive species in Lake Champlain. At the time there is no way to measure the impact of invasive species. The number of identified invasive species is the best data available

- **Number of Invasive Non-native Terrestrial Species.** Source: The Nature Conservancy?
- **Number of Invasive Non-native Insect Species.** UVM Extension?

- **Number of Spread Prevention Programs that address Non-native Invasive Aquatic Species**, Source: Aquatic Invasive Species Management, ANR.

  Chittenden County aquatic invasive species spread prevention initiatives, municipal and other:

  VT Invasive Patrollers
  Lake Iroquois – 7 trained, committed VIPs

  Public Access GREETER Program
  Williston, Lake Iroquois
  LCBP, Lake Champlain Stewards (greeter) – VTDFW public accesses: Mallets Bay, Shelburne Bay, Burlington

  Other Town-run AIS programs with spread prevention components
  Charlotte, Thorp Brook European frog bit management program
  Essex, Indian Brook Reservoir Eurasian watermilfoil management program

  VTDEC Public Access Sign Program
  Arrowhead Mountain Lake
  Burlington Bay, Lake Champlain
  Colchester Point, Lake Champlain
  Colchester Pond
  Converse Bay, Lake Champlain
  Indian Brook Reservoir
  Lake Iroquois
  Lamoille River
  Mallets Bay, Lake Champlain
  Sandbar WMA, Lake Champlain
  Shelburne Bay, Lake Champlain
  Shelburne Pond
  Van Everest, Lake Champlain (Milton)

Performance Measures of Strategies:

- **Number of Town Plans Calling for Action Against Invasive Species**. Source: Municipal Plans.

Data Gaps and Future Analysis to Include:

- **Habitat Block Areas compared to Planning Areas.**
- **AIRES model at the Gund Institute for Core Habitat and Connectivity.**
- **# of new road miles added to Habitat Blocks**
- **Easements with species specific protection language.**
- **Total Length of Stream Segments with Forested Buffer 50, 100 and 330'.**
- **%/Amount of development in the riparian zone (bldg structures, roads, > 50% constricting culverts/bridges) using the 100 meter (330') stream setback.**
- **Grassland, Shrub, and Mast habitat: Acres created using various programs (possibly NRCS).**
- **Deer Wintering Areas.**
- **Level of invasive species infestation.**
- **Number of Invasive Non-native Terrestrial Species**

- **Number of Invasive Non-native Insect Species**
- **Number of Town Plans Calling for Action Against Invasive Species**
- **Climate Change Adaptation Measures and Indicators**

SUB-GOAL 2 - WATER QUALITY Conserve, protect and improve water quality and quantity in Chittenden County watersheds.

Key Issues - Why this is Important

- Vermont water bodies continue to face mounting pollution pressures from increased development and agricultural activities. Cumulative impacts from disappearing wetlands, channelization of streams and rivers, reduction and alteration of natural floodplains, increasing impervious surfaces, steady high pollutant levels and increasing nonpoint pollution sources, nutrient enrichment and sedimentation, reduction and elimination of vegetative buffers and climate change all threaten to further impair Vermont's waterways and aquatic life support conditions. If these trends continue the range of beneficial uses for select water bodies will be further limited.
- As of 2005, 22,120 residents of Chittenden County (almost 15% of the population) rely on groundwater sources for their drinking water (Source: USGS Water Use Compilation – completed every 5 years). Groundwater resources are threatened by failing septic systems and petroleum spills/leaks.

Key Indicators - How are we doing?

Rivers:

- **Number and Length of Impaired Rivers/Streams; Streams Stressed and in Need of Further Assessment; and Number of Streams with a TMDL Management Plan**. Source: State's 303d list, Part A, C and D.

Display on a map with reason for impairments and/or just a list and have different color codes for each part of the list. Data as of 2008, more current data is now available:

2008 IMPAIRED WATERWAYS IN CHITTENDEN COUNTY[a]

Waterway	Impairment	Impaired Length (miles)
Lake Champlain Basin		
Burlington Bay (Lake Champlain)	PCBs	area
Direct Drainages to Inner Malletts Bay	E.Coli	14.8
Englesby Brook	E.Coli	2.5
Lake Champlain (Main Section, Otter Creek Section, Northeast Arm)	PCBs	area
LaPlatte River	Fecal Coliform	12.1
Malletts Bay (Lake Champlain)	PCBs	area

Mud Hollow Brook	Fecal Coliform	3
Potash Brook	E.Coli	1
Shelburne Bay (Lake Champlain)	PCBs	area
Stone Bridge	Undefined	2
Winooski River Watershed		
Allen Brook [c]	E.Coli	4.6
Muddy Brook	Toxics, Nutrients, Temperature	7
Huntington River	E.Coli	0.7
Shelburne Pond	Low Dissolved Oxygen, Phosphorus	area
Unnamed Tributary to Joiner Brook	Sediment	0.5
Unnamed Tributary to Muddy Brook	Toxics, (TCE)	0.8
Lamoille River Watershed		
Stevensville Brook	Acid	1.2
Otter Creek Watershed		
Lewis Creek [c]	E.Coli	9.4
Pond Brook [c]	E.Coli	0.5

[a] The waterbodies listed in this table are on Part A of the State's 303d List of impaired waterways. These are waterbodies that are known to have one or more impairments and are scheduled to have a TMDL study developed. There also are waterbodies in Chittenden County that are on other parts of the 303d List:
Part B – Impaired, No TMDL Required because Attainment Expected in a Reasonable Time: Burlington Bay, Muddy Brook and Unnamed Tributary of Winooski River;
Part C – Stressed and in Need of Further Assessment to Confirm If Impaired: Lewis Creek, Indian Brook, Malletts Creek, direct drainages to Burlington Bay, Lake Champlain Main Section, Huntington River, Tributary #8, of Sunderland Brook, Unnamed tributary to Sunderland Brook, and Winooski River;
Part D – Completed TMDLs: Lake Champlain (Main Section, Northeast Arm), Shelburne Bay, Potash Brook;
Part E – Altered by Exotic Species: Lake Champlain (Otter Creek Section, Northeast Arm, Main Section), Arrowhead Mountain Lake, Burlington Bay, Lake Iroquois, Mallets Bay, and Shelburne Bay;
Part F – Altered by Flow Regulation (e.g., Dams): Arrowhead Mountain Lake, Joiner Brook, Lower Lamoille River, and Lower Winooski below Essex #18 dam;
Part G – Altered by Channel Alterations (e.g., Dredging and Improper Culvert Placement): None.

Lengths and impaired percentages are only the portions of waterways within Chittenden County.

SOURCE: Vermont Dept. of Environmental Conservation, 303d List, July 2008; USGS, Vermont Hydrography Dataset, 2001-2004.

- **Macroinvertebrate Ratings for Tributaries in Chittenden County** – Good/Fair/Poor. Source: Rich Langdon, ANR. Many streams in CC are assessed regularly – especially the stormwater impaired streams. Data can be updated every June for those streams that were monitored in the previous year.

Lake:

- **Burlington Bay, Mallet's Bay and Inland Sea Annual Mean Total Phosphorus Concentrations**, 1991-2011, compared with the applicable criterion in the Vermont Water Quality Standards.

Watershed:

- **Percent of Impervious Surface by Watershed**. Source: ANR is developing a statewide impervious layer. This will not be as accurate as the Town level data that Burlington and South Burlington have; but it will be valuable at the watershed scale. They are intending to get this done by the Summer 2012. Ryan Knox, IT/GIS Dept.

Groundwater:

- **# of Reported Petroleum Spills/Leaks**
- **# of Reported Contaminated Wells**
- **# of Reported Septic System Failures. Source: The number of Wastewater Permits issued for replacement systems.**

Other/Supporting Indicators

- **Main Lake Annual Mean Total Phosphorus Concentrations**, 1991-2011, compared with the applicable criterion in the Vermont Water Quality Standards (Source: Eric Smeltzer, ANR)
- **Mean Total Phosphorus Loading Rates to Lake Champlain from the Winooski River, Lamoille River, LaPlatte River** (metric tons per year) for two year intervals, 1991-2010, compared with mean flows at the Essex Jct. USGS stream gage (millions of cubic meters per year). Error bars are 95% confidence intervals. Water years begin on Oct. 1. (Source: Eric Smeltzer, ANR)

Performance Measures:

- **% of towns that have completed road erosion needs inventories and capital budget plans since 1997**. Source: Lake Champlain TMDL Indicators, Better Back Roads, Other? Data will be updated annually.
- **Cumulative percent of priority erosion control projects identifies in erosion needs inventories that have been completed**. Source: Lake Champlain TMDL Indicators, Better Back Roads, Other? Data will be updated every 5 years.

- **% of tree canopy coverage within urban landscape zones in the Lake Champlain Basin**. Source: Lake Champlain TMDL Indicators, Danielle Fitzko (FPR) – Urban Tree Canopy GIS layers have been developed. The analysis was only done in the 'urban landscape zone' – which is based on housing density. This data will be updated every 5 years. Developed from National Land Cover Dataset – USGS.
- **% of towns with good water quality protection provisions in zoning ordinances**, including river and lakeshore buffer protection, ground water protection, fluvial erosion hazard prevention, and incorporation of Low Impact Development standards where appropriate. Source: Lake Champlain TMDL Indicators; Milly Archer, VLCT; and Cathy Kashanski, ANR.

Data Gaps and Future Analysis to Include:

- **Number of Streams with high quality aquatic natural communities**
- **# of Reported Petroleum Spills/Leaks**
- **# of Reported Contaminated Wells**
- **# of Reported Septic System Failures. Source: Wastewater Permits for replacement systems.**

SUB-GOAL 3 - AIR QUALITY – Conserve, protect and improve the air quality by reducing emissions of Federal and State-identified air pollutants and greenhouse gases.

Key Issues - Why this is Important

- Air quality is fundamental to a healthy natural and human environment. Outdoor air pollution in significant concentrations can raise aesthetic and nuisance issues such as impairment of scenic visibility, unpleasant smoke, or odors. Unless abated, it can also pose human health problems, especially for more sensitive populations like children, asthma sufferers, and the elderly.
- While Chittenden County's air quality meets current National Ambient Air Quality Standards (NAAQS) establishing maximum acceptable pollutant levels, ground-level ozone levels are close to the current standard and fine particulate pollution (PM2.5) has approached the standard in recent years.
- If the NAAQS are revised to be more stringent - or air pollutant levels increase - so that we exceed the NAAQS, additional and costly environmental regulations will apply to our region. Greenhouse gas emissions contribute to global climate change, which is already impacting our region.
- Reduction of greenhouse gas emissions should be done through conservation, efficiency and energy alternatives and therefore reaching success on this goal is largely dependent on the following goals: Future Development Pattern (BE), Transportation (BE) and Reduction of Energy Consumption (BE).

Key Indicators - How are we doing?

- **Monitored ground-level ozone and fine particulate matter concentrations**. Ozone levels are monitored by ANR in Underhill (downwind of Burlington) and PM2.5 levels are monitored by ANR in Burlington. These data can be obtained from the state or from EPA Region 1. I've used the annual report published by EPA: http://www.epa.gov/region1/oeme/AnnualReport2010.pdf. The report is published about 1 year after the data year. Numeric targets for ozone and PM2.5 should be less than the current NAAQS.

- **Regional greenhouse gas emissions.** GHG emissions will be determined by the regional GHG emissions inventory being developed. Some of the input data for the emissions inventory is currently available only every 5 years, but we should probably strive to be able to do an annual emissions inventory. Numeric targets for GHG emissions might be established with appropriate public engagement after the emissions inventory is complete.

Other/Supporting Indicators

- Air Quality - **Annual number of days classified as "unhealthy for sensitive groups," "unhealthy," or "very unhealthy" based on the Air Quality Index**. Current AQI data is available at: http://www.epa.gov/region1/airquality/aqi-vt.html. We would have to research how to get annual data (possibly http://www.anr.state.vt.us/air/Monitoring/cfm/RealTimeData.cfm).
- **Rates of Asthma**. Source: ECOS Health Analysis Report, VDH

- Climate Change - **Average minimum and maximum temperatures** (available for Burlington airport from the National Weather Service: http://www.erh.noaa.gov/btv/climo/ClimoTemps/BTVmin.gif and http://www.erh.noaa.gov/btv/climo/ClimoTemps/BTVhigh.gif)

Data Gaps and Future Analysis to Include:

- **Share of households within one quarter mile of bike paths/lanes.**
- **Share of population that commutes more than 25 miles to work.**

SCENIC AND RECREATIONAL RESOURCES

Goal: Conserve, protect and improve valued scenic and recreational resources and opportunities.

Key Issues - Why this is Important

- Scenic and recreational resources give residents a place to breathe, relax, play, hold community gatherings and learn about nature, conservation values and our heritage. They provide important ecological functions including wildlife habitat, and water and air quality protection. In addition, these resources house our natural and historic heritage including scenic vistas. As we work towards reinforcing VT's historic settlement pattern of compact hamlets, villages and urban centers, the need for access and appreciation of these resources is especially important.
- Maintaining and improving recreational access in Chittenden County is important for our quality of life. *Conserving Vermont's Natural Heritage*, Vermont Fish and Wildlife Department and the Agency of Natural Resources, 2004 identifies loss of public appreciation for the environment as one of seven mechanisms by which current development patterns degrade Vermont's natural heritage. Essentially if we lose natural resources and people can't experience the benefits first hand, they will lose appreciation for them.
- Scenic resources represent an important element of the region's landscape and contribute directly to sense of place, quality of life and economic vitality through tourism and by attracting new residents and businesses. The scenic economy is one part of the region's overall attraction and generates significant local revenues. Locations with scenic beauty are also often places that display high values for ecological systems and intact landscapes. Thus such lands may be more sensitive and more vulnerable when and if development changes are proposed.
- We cherish our mountain, field and lake vistas - yet these are places where new subdivisions, energy development and second homes are often sited. Ironically, scenic resources are often undervalued and unprotected, although when projects are proposed that might impact or alter vistas and scenery there is often strident and vocal opposition to change, even if a project is proposed for lands under private ownership. This paradox needs to reconciled if, for example, the region continues to develop new infrastructure for energy generation and transmission, or if communities want to effectively balance scenic resource protection with growth and land based economic development.

Key Indicators - How are we doing?

- Quantity of Scenic and Recreational Resources – **Percent of Chittenden County land area that includes scenic and recreational resources that are open to the public**. Source: Acres of private and public conserved land open to the public from the UVM SAL Conserved Land Database. This data should be mapped and the percentage should be identified.

- Access to Scenic and Recreational Resources – **Percent of households within ½ mile of scenic and recreational resources**. National Recreation and Park Association Standards calls for ¼ to ½ mile. Source: Acres of private and public conserved land open to the public from the UVM SAL Conserved Land Database and the e911 point data from CCRPC. This data should be mapped and the percentage should be identified.

Other/Supporting Indicators

Performance Measures for Strategies:

- **# of towns with mapped scenic resources or scenic overlay**: 21% of towns have a scenic overlay/preservation district
- Source: ECOS Natural Resources Analysis Report
- **# of towns with mapped recreational resources with management plans in place**. Source: Does not exist, would need to be collected

WORKING LANDS

Goal: Conserve, protect and improve the working farms and forests. (including local food and energy production).

Key Issues - Why this is Important

- A truly sustainable society has the ability to produce enough food to support its local population in a way that does not reduce the fertility of the land. Local food production is preferred since the transportation to import food consumes tremendous amounts of energy and generates pollution. When food is imported from far-away places, nutrient value is reduced during the transport time. Local farming is part of a self-reliant and diverse economy, making a region less vulnerable to market crises. More local farmland means less developed land, fewer impervious surfaces, and thus a greater presence of the natural ecosystem's features and functions.
- Good high quality food, and productive forests, are dependent upon clean water and clean, nutrient rich, soils. It is imperative that we maintain high quality water and soils for healthy and viable food and forest product industries
- Forest fragmentation and increased parcelization have meant that the number of parcels has gone up, while their size has gone down, diminishing their economic viability and the ecological services they provide.
- Future land-based opportunities, for farming and forest based products in particular, may become more limited as suitable open land becomes less available. This has far reaching consequences for the future of Vermont's local, and potentially tourism, economies.

- Extraction industries are associated with different land management issues than farms and forests; however these are included here for lack of a better location at this time. The only earth resources in Chittenden County that currently are commercially viable are sand and gravel. These nonrenewable resources are used to produce building materials (such as concrete and railroad ballast), to use as landscaping materials, and to maintain roads. Chittenden County is rich in sand deposits with over two billion cubic yards available. Almost another two billion cubic yards of sand is unavailable because of inaccessibility, conflicting land use, environmental sensitivity, or poor quality. Gravel is less abundant with about 430 million cubic yards available and less than 140 million cubic yards unavailable.

Key Indicators - How are we doing?

- **Acres and number of parcels of UVA Forest Land enrollment**. Source: UVA, County Forester

Note: Many of the following indicators were pulled from the State Farm to Plate program. Therefore, we are relying on their ability to collect these indicators, and we will then need to disaggregate them for Chittenden County. If this proves to not be an efficient method, we will need to reassess these indicators.

- **Number of acres and percentage of total prime agricultural soils and soils of statewide significance ("statewide agricultural soils") in production and/or conserved for active agricultural production**. Measures:
  1. **The number of acres and percentage of total prime and statewide agricultural soils under conservation easement available for active farm use.** Source: Farm to Plate and/or Ag Census
  2. **The total number of acres of prime and statewide agricultural soils, the number of acres that are conserved, and the number of acres that have been converted to nonfarm use** (developed, withdrawn from Use Value Appraisal Program, etc.). Source: Farm to Plate and/or NRCS and Vermont Land Trust?; Also, for conversion to non-farm use and others http://www.farmlandinfo.org/agricultural_statistics/index.cfm?function=statistics_view&stateID=VT
     a. **Working landscapes (farming, forestry, sand and gravel) comprise up to 25% of Chittenden County's land area, a decrease of 5% since 2003 due to residential development.** Chittenden County lost nearly half its dairy farms in a 10-year period (1997-2007). In 2008, 21.7% of land in Chittenden County was used for farming. Cropland decreased by over 40% in a 20 year period (1987-2007), but the number of farms has increased by 189 due to the increase of smaller farms dedicated to local food production. (Source: 2013 Draft Chittenden County Regional Plan)
     b. **Percentage of Chittenden County in current-use program**: In 2009, 34% of privately owned land in Chittenden County was enrolled in Use Value Appraisal (UVA—a program allowing land to be taxed based on its income

producing potential from agriculture or forestry); of that, 54% was on land >50 acres. (Source: *Informing Land Use Planning and Forestland Conservation Through Subdivision and Parcelization Trend Information* – Vermont Natural Resources Council, September 2010).

3. **The use of all prime and statewide agricultural soils and the percentage of total acres in (1) idle, (2) low-use, and (3) active agricultural production.** Source: Farm to Plate and/or NRCS, and VLT. Farm to Plate is hoping to report on this annually.
4. **The number of producers participating in conservation planning.** Source: Farm to Plate and/or NRCS.
5. **The number of producers participating in other soil monitoring and management programs.** Source: Farm to Plate and/or NRCS and UVM doing most of this work, but there is no database.

Other/Supporting Indicators

- **Number of farms with a net positive income**. Measure: Net farm income. Source: Farm to Plate and/or Net Farm Income from http://www.ers.usda.gov/StateFacts/vt.HTM. Farm to Plate is planning on reporting this annually.
- **Number of acres of farmland in active agricultural production** (Note: Farm to Plate does not plan to report on this annually). Measures:
    1. **Dollars invested annually in farmland preservation**, with an emphasis on active, sustainable production for new and existing farms. Sources: Farm to Plate and/or VLT, UVLT, Land for Good, UVM, VHCB; http://www.farmlandinfo.org/vermont/.
    2. **The average price per acre of conserved farmland vs. notconserved farmland.** Sources: Farm to Plate and/or VLT, UVLT, Land for Good, UVM, VHCB.
    3. **The number of farm transfers that result in farms remaining in agricultural production and the percentage that are intergenerational transfers** (i.e., are we helping the next generation of farmers?). Sources: Farm to Plate and/or VLT, UVLT, Land for Good, UVM, VHCB.
    4. **Number of acres of farmland conserved.** Sources: Farm to Plate and/or VHCB, VLT.
    - Reduced adverse environmental impact. Indicators:
    1. **The number of certified organic acres under production**. Source: Farm to Plate and/or NOFA VT and Ag Census. Note: Farm to Plate is not going to report on this annually.
    2. **The number of farms that have implemented written nutrient management plans for improving water quality protocols and optimizing the use of fertilizer, manure, compost, and crop rotation to enhance soil health**. Source: Farm to Plate and/or UVM Extension, VAAFM, NRCS. Note: Farm to Plate is not going to report on this annually.
    3. **The existence of a comprehensive statewide soil monitoring program**. Source: Program does not exist yet. Farm to Plate is planning on reporting on this annually.

- **Percentage of Vermont food products consumed by Vermonters**. Farm to Plate goal is to increase from 5% to 10%. Their measures include:
    1. **Direct sales by farm and type of product; direct sales as a percentage of consumer food expenditures.** Source: Farm to Plate and/or Ag Census, Data available by County; and UVM Ext, NOFA VT and VT Vegetable and Berry Growers Association Survey. Farm to Plate is planning on reporting on this annually.
    2. **Vermont food cooperatives' gross sale revenues from locally produced food as a percentage of their total gross sales revenue.** Source: There is a one-time UVM thesis; Possibly Neighboring Food Coops Association or Individual Coops (City Market tracks this). Farm to Plate is planning to report this annually.
    3. **The number of schools hosting Farm to School educational programs.** Source: Farm to Plate and/or VT Sustainable Jobs Fund (VSJF). Farm to Plate is planning to report this annually.

Data Gaps and Future Analysis to Include:

- **Forest product production or sales.** Chittenden County figures will be difficult to obtain.
- **% of municipalities that require access to open space set asides within subdivisions.** The assumption is that access is needed in order to use the parcel for productive agriculture, forestry or recreational uses (could be public or private access). This measure can be referred to as parcel viability after subdivision. (Source: Data does not yet exist; may be difficult to collect)
- **Number of municipalities with a LESA (Land Evaluation, Site Assessment) system or other system to help identify important farms and target protection of those farms.** System would need to be established.
- **% of municipal bylaws that include earth resource extraction standards to avoid adverse impacts on surface water and ground water resources; and minimizes adverse effects on the environment and adjoining land uses by requiring erosion and runoff controls during extraction operations and restoration after operations cease.** Source: Data not available; it would need to be collected.

Social Community

Broad Goal - All community members have the skills, resources, and assurances needed to participate in the workforce and in their family, civic and cultural lives, within and among their neighborhoods, and in the larger community.

EDUCATION, KNOWLEDGE & SKILLS

Goal: Lifelong learning opportunities are available to all.

This section provides an overview of the state of educational participation and achievement in Chittenden County. Understanding the state of education provides an insight into the knowledge and skills of residents and how they can apply these to improve their quality of life.

Key Issues - Why this is Important

- Educational achievement is essential for effective participation in society. Increasingly, urban societies are becoming knowledge-based and urban economies require innovative solutions to meet market demands. People's ability to up-skill and re-skill during their working lives is important if they are to keep pace with rapidly changing work environments. Access to life-long learning opportunities is also related to people's need for self-fulfillment and self-determination.
- Education is the surest and quickest way to prosperity. Not only do incomes rise with educational attainment, but also the rate of increase is higher for those with higher levels of education. As education helps individuals become economically successful, it also helps regional economies. Skilled workers are a region's greatest competitive advantage.
- The math and science test scores, such as those given to 11th graders in 2010, are low even though they are generally above the state averages. In most cases, less than 50% of students in the schools with the best scores are proficient in math and science. If Chittenden County is to be a high tech community, it must enhance its public school performance in these fields to attract top technology and medical talent from across the country and to generate a local labor supply that meets employer needs.
- Older children and youth who have access to quality out-of-school and summer opportunities are more likely to develop the skills they need for performing well in school and stay engaged in school
- 42% of Vermonters who have less than a high school education earn an income below the federal poverty level, only 5% of those who have a college degree earn so little.
- The area needs to address labor recruitment and development to offer the attractions needed for such recruitment, including more affordable quality housing and school systems that are at least on par (in key quality measurements, such as test scores,

percent of graduates going on to post secondary education, extracurricular activities, advanced placement courses, available technical courses and programs such as those in Science, Technology, Engineering and Mathematics-STEM, etc) with those communities in which technical, professional and managerial personnel live in leading technology centers across the country.

- 30% of employers (largely within the skilled machine trades) report that they have training needs that are not met by local resources. Source: WDGT Chittenden Employer Survey, September 2011
- Two-thirds of people with less than a high school education report having one or more chronic health conditions, compared to one-third of those who have a college degree or more.
- The County's ability to grow its economy in the future will be closely tied to its ability to provide available skilled labor, particularly once the currently unemployed are absorbed back into the ranks of the employed as much as their skills will allow.
- The County's labor force has a relatively low unemployment rate and high labor participation rate, with many skills categories, particularly technical skills, reported as difficult to find or unavailable by area employers.
- Employers report very good to excellent workforce quality, with good work ethic and productivity, and low turnover and absenteeism.

SUB-GOAL 1 - EARLY CHILDHOOD EDUCATION

Key Indicators

- **Statewide Assessment of Kindergarten Readiness across 5 domains (AHS, United Way)**
- **Overall STARS Ratings for state regulated childcare and preschool programs**
- **% of Chittenden County families paying more than 25% of income towards child care by race and (head of household?) gender**

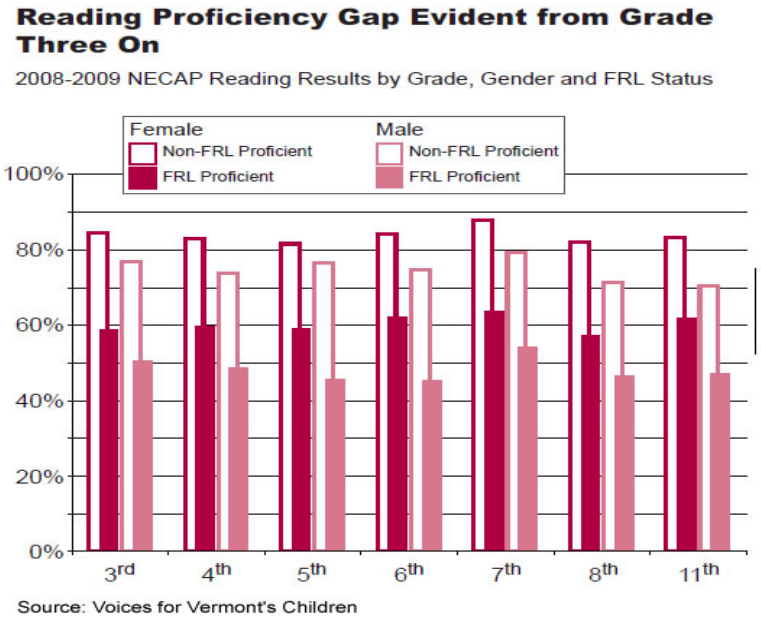
Performance Measures of Strategies:

- **% of Chittenden County families eligible for subsidized child care on waiting list by income, gender, and race** (need to check data availability)
- **% Chittenden County children enrolled in early childhood development programs by income, gender and race** (need to check data availability)

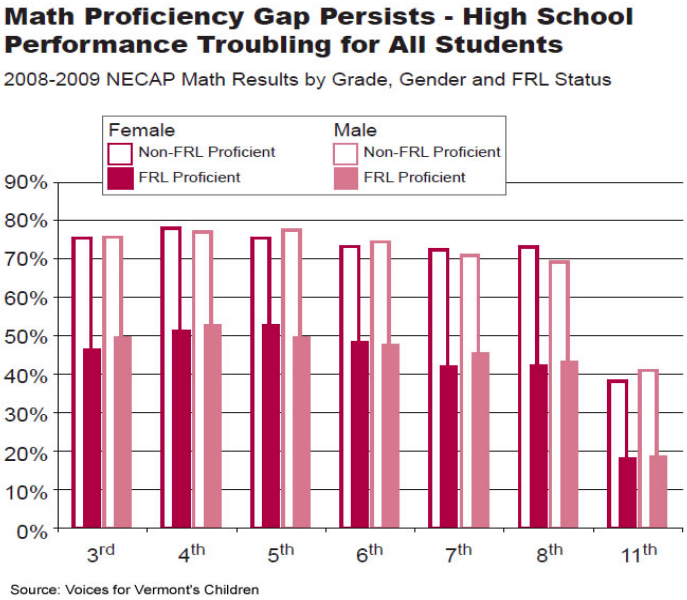
SUB-GOAL 2 - K-12 RESULTS

Key Indicators

- **NECAP Reading proficiency GAP disaggregated by Free and Reduced Lunch status, gender, race, disability, ELL.** (Track subject/grade (3rd, 8th, 11th) over time by district) – *add research link about why 3rd grade reading level is important*



- **NECAP Math proficiency GAP disaggregated by Free and Reduced Lunch status, gender, race, disability, ELL. (Track subject/grade (3rd, 8th, 11th) over time)**



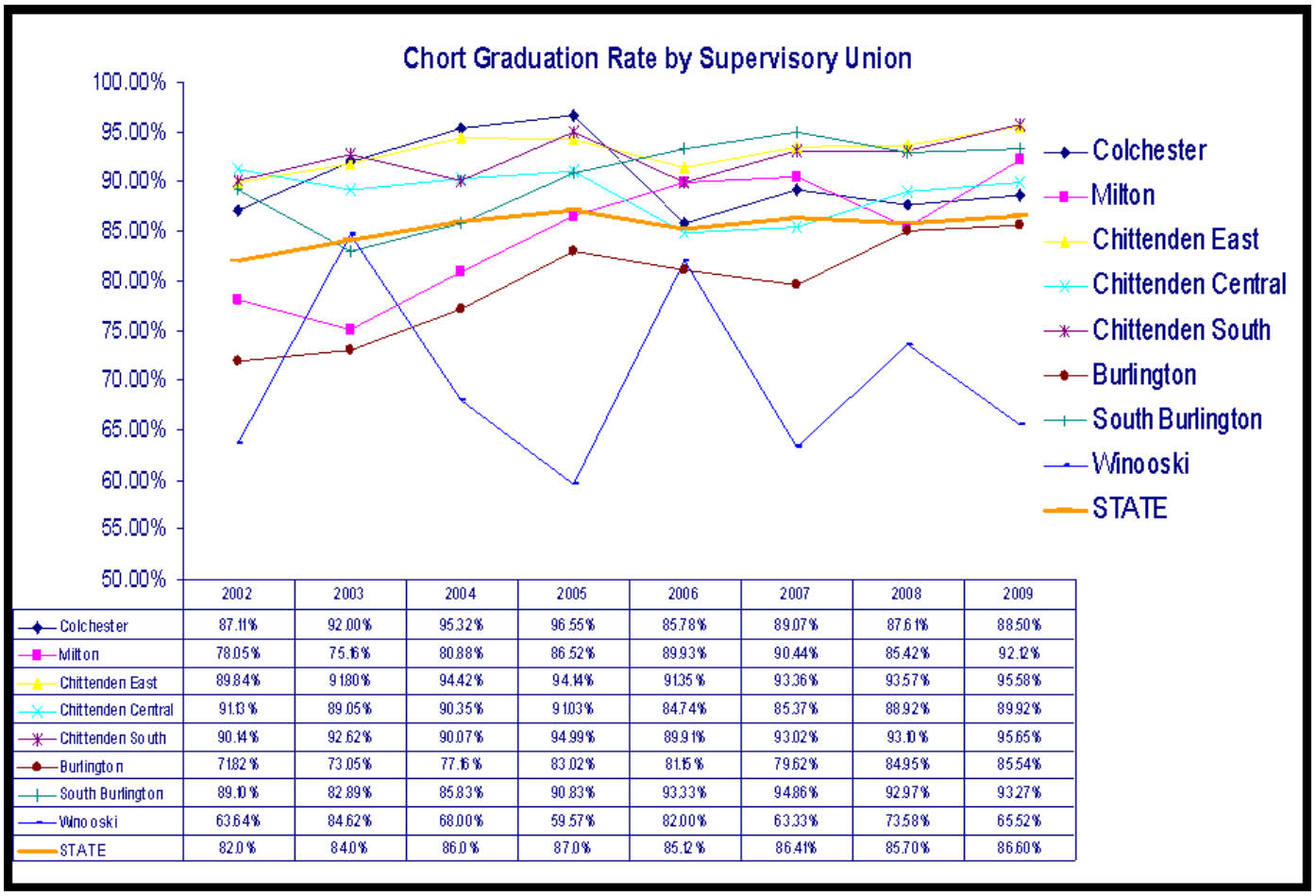
* *Note:* Further analysis needs to be done to disaggregate proficiency gap analysis by race and English as a second language status.

- **Suspensions (in-school or out-of-school) % of students, % of students by race, FRL, ELL**
- **Truancy rate by race, FRL. ELL (United Way)**
- **Drop-out rate, by race, FRL, ELL**
- **Reading level of inmates (see also Public Safety & Criminal Justice)**

SUB-GOAL 3 – EDUCATIONAL ATTAINMENT

Key Indicators

- **Chittenden County graduation rates disaggregated by income, gender, race, FRL, ELL. Source: US Census**



	2002	2003	2004	2005	2006	2007	2008	2009
Colchester	87.11%	92.00%	95.32%	96.55%	85.78%	89.07%	87.61%	88.50%
Milton	78.05%	75.16%	80.88%	86.52%	89.93%	90.44%	85.42%	92.12%
Chittenden East	89.84%	91.80%	94.42%	94.14%	91.35%	93.36%	93.57%	95.58%
Chittenden Central	91.13%	89.05%	90.35%	91.03%	84.74%	85.37%	88.92%	89.92%
Chittenden South	90.14%	92.62%	90.07%	94.99%	89.91%	93.02%	93.10%	95.65%
Burlington	71.82%	73.05%	77.16%	83.02%	81.15%	79.62%	84.95%	85.54%
South Burlington	89.10%	82.89%	85.83%	90.83%	93.33%	94.86%	92.97%	93.27%
Winooski	63.64%	84.62%	68.00%	59.57%	82.00%	63.33%	73.58%	65.52%
STATE	82.0%	84.0%	86.0%	87.0%	85.12%	86.41%	85.70%	86.60%

- **# completing GED**
- **# of CC Community High School of Vermont (inmates)**
- **% of Chittenden County high school graduates that attend post-secondary institutions, training, or apprenticeship programs**
    - In Chittenden County, educational levels among residents 25 years old and older exceed state and national norms. The estimated percentage of County residents with a four year bachelor's degree, or higher is 42.4% compared to a state average

of 32.6% and a national average of 27.5%. The percent with graduate degree also exceed state and national averages by significant margins.

- **Level of education attained by gender, race (by town)**

SUB-GOAL 4 – CAREER TRAINING

Key Indicators

- **% of high school students scoring high proficiency science and math**
- **Total # of graduates from training programs**
- **Graduation rates from Chittenden County Colleges and Universities**

Performance Measures of Strategies:

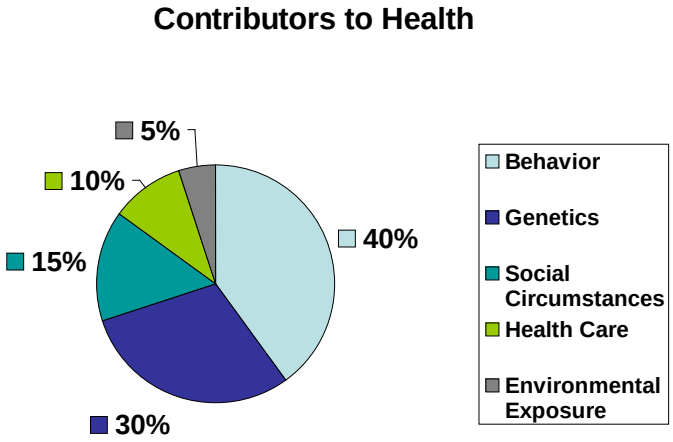
- **$ invested and Vermonters served by Vermont Training Program, WETF, WIB**
- **# of active trainees in industrial training and modern apprenticeships**
- **# of adult education programs offered in Chittenden** County Source: Vermont Adult Learning
- **# of adult education students in Chittenden County** Source: Vermont Adult Learning -

HEALTH

Goal: All Chittenden County residents are healthy.

Key Issues - Why this is Important

- Similar to the national leading causes of death, the leading causes of death in Chittenden County are cardiovascular disease, 32%, followed by cancer, 26%. Tobacco use, diet, physical inactivity, and excessive alcohol use are behavioral risk factors for these diseases.
- All Chittenden County residents should have access to affordable and accessible health care. A person's behaviors are the most important factors that determine health outcomes. Chittenden County residents should have the opportunity to make the choices that allow them to live a long, healthy life, regardless of their income, education or ethnic background. Health starts in our families, in our schools and workplaces, in our playgrounds and parks, and in the air we breathe and the water we drink. The conditions in which we live and work have an enormous impact on our health.



McGinnis, et. al. "The Case for More Active Policy Attention to Health Promotion," Health Affairs, Volume 21, Number 2 (2002): 78-93.

- Behaviors can be influenced, supported, or undermined by community design. Community design can also impact social circumstances, health care, and environmental exposures. Healthy community design can influence the overall health of a community by making healthy lifestyle choices easily available and accessible to all community members. It links the traditional concepts of planning (such as land use, transportation, community facilities, parks, and open space) with health themes (such as physical activity, public safety, healthy food access, mental health, air and water quality, and social equity).

OVERALL GOAL - COMMUNITY HEALTH

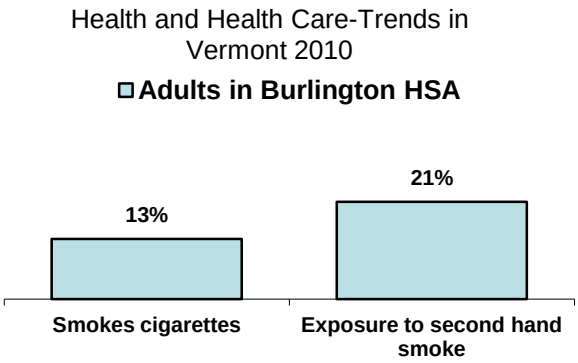
Key Indicators

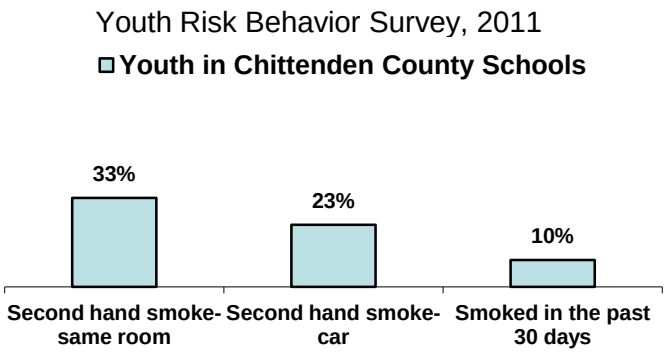
- **Life expectancy: 76.54 years in Vermont, 1989-1991**, US Census.
- **Infant mortality rate: 5.1 per 1,000 live births in Vermont,** 2007, US Census.
- **Low birth weight babies: 6.2% of births in Vermont, 2007,** US Census.
- **In the Burlington Health Service Area, 2% of adults report poor health general Health, 34% of adults report mental health not good at least one day in past 30 days** (2004-2008, BRFSS).

SUB-GOAL 1 - HEALTH BEHAVIORS

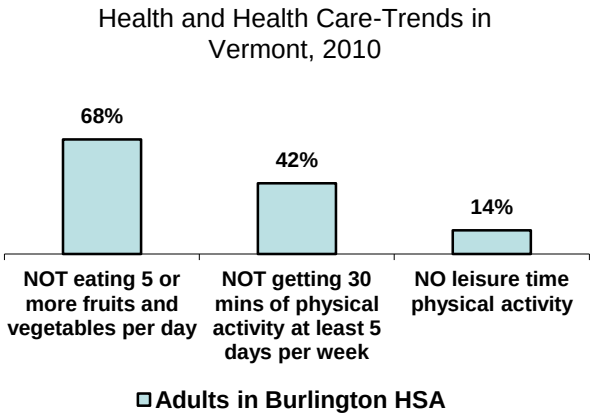
Key Indicators - How are we doing?

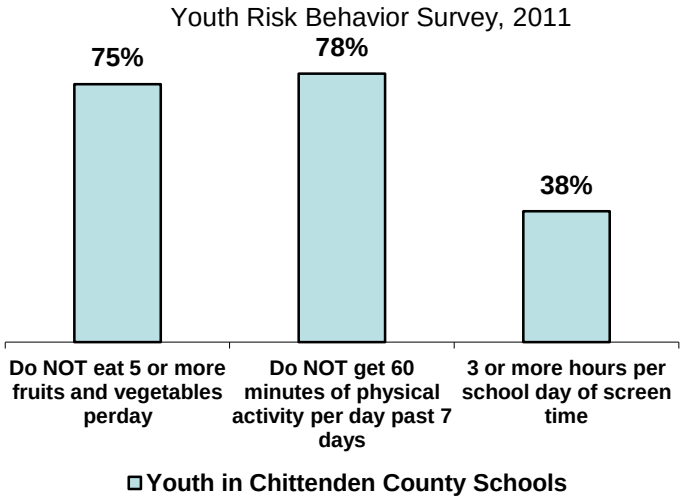
- **Tobacco use**





- **Diet and physical inactivity**





NOTE: fruit and vegetable measures will change from percent who do not eat 5 or more fruits and vegetables a day to two separate data points; percent who have increased the proportion of fruits to their diet and percent who have increased the proportion of vegetables to their diet.

NOTE: screen time measure will change from 3 or more hours to 2 or more hours.

- **In 2010, 18% of adults in Chittenden County report engaging in binge drinking. 7% report being heavy drinkers** (2004-2008, BRFSS).
- **In 2011, 32% of Chittenden County high school youth report drinking in the past 30 days.**

Performance Measures of Strategies:

- **Percent of total regional population that reside in a low income census track AND reside more than one mile from a supermarket/large grocery store** (for rural census tracts, the distance is more than 10 miles) (Source: US Census Zip Code Business Patterns Data (collected at VDH), requested by PSC)
- **Percent of population that reside within ¼ mile of a park or open space** (Source: CCRPC GIS mapping, may have to use e911 points instead of population, requested by PSC)
- **% of people who walk to work** (ACS) – delete from here if in Transportation

SUB-GOAL 2 - ENVIRONMENTAL FACTORS

NOTE: The Department of Health's Environmental Health Unit will be consulted for their opinion on the best indicators for this section. Also, the air quality and water quality sections in the Natural Systems section of this report should be referenced here.

- **Environmental hazard "points" per acre** (requested by PSC)
- **Lead poisoning rate** (lead screening, VDH)
- **% of adults and children with asthma** (Healthy Vermonters 2020)
- **% hospitalization due to asthma** (Healthy Vermonters 2020)
- **14% of adults in the Burlington Health Service Area report ever having asthma** (2004-2008, BRFSS).
- **3.6 average annual hospitalization rate for asthma** (2004-2006) (there are several other related asthma data points related to hospitalization)

SUB-GOAL 3 - ACCESS TO QUALITY HEALTH SERVICES

- **8% of adults in the Burlington Health Service Area report they do not have insurance coverage** (2004-2008, BRFSS, VDH), **5% Chittenden and Grand Isle Counties** (2009, VTHIS, BISCHA)
- **16% in Chittenden and Grand Isle Counties are covered by any state health insurance program** (2009, VTHIS, BISCHA)
- **12% of adults in the Burlington Health Service Area report they do not have a doctor** (2004-2008, BRFSS, VDH)
- **% of Vermonters underinsured**

- **Percent of practicing primary care providers** (Note: we do have the AHEC Primary Care Survey that provides data on primary care provider shortfalls by FTE, but there are no shortfalls in Chittenden County. It's possibly more complex when you also look at whether they are accepting new patients)
- **People needing medical care, dental care, diagnostic test, prescribed medicine, mental health care, but did not get it because of cost** (Source: BISHCA – VT Household Health Insurance Survey) – medical care, dental care, etc. are each separate data points

PUBLIC SAFETY & CRIMINAL JUSTICE

Goal: Improve public safety.

Key Issues - Why this is Important

- Feeling safe and secure in our homes, communities and urban areas is key to overall health in the community. Safety and perceptions of safety feature highly in people's view of their living environment, their sense of well-being and quality of life. As urban areas grow, the need for safe social and physical environments, where people are able to participate fully in their communities, becomes an increasing challenge.
- The cost of emergency response and overlapping law enforcement agencies is a challenge to municipalities.

Key Indicators - How are we doing?

Perceptions of Safety

- **Perceptions of safety depending on the location and time of day** (primary data collection through survey)

Child Safety

- **Since 2008 there has been a state increase in the rate of substantiated cases of child abuse and neglect.**
- **Child Maltreatment rate per 1000** Source: DCF Economic Services (VDH indicator not available at VDH)

Injuries

- **% of adults that had a fall in the past 3 months (BRFSS)**
- **The number of falls requiring hospitalization of those over 65 years?**

Road Safety – *get from Transportation goal or (see Transportation)delete here*

- What is the rate of serious and fatal road crash injuries over time?
- % of adults that use seat belts whenever riding in a car (BRFSS)
- % of youth that use seat belts whenever riding in a car (BRFSS)

Crime Levels

- **The overall rate of crime in CC vs VT**
- **Violent Crime Rate (per capita) vs non-violent** **Source: VCIC (VDH indicator not available at VDH) – (AHS list)**
- **% Violence by current or former intimate partner** **Source: BRFSS (state level only) (VDH**
- **Rate of adult abuse and neglect victims (AHS list)**
- **Rate of petitions filed for Relief from Domestic Abuse (AHS list)**
- **Rate of sexual assault (AHS list)**
- **Race data on traffic stops (Burlington, Winooski, and S. Burlington)**

Crime by type Chittenden County vs. Vermont 2009

Offense Type*	Chittenden County	Vermont
Total	9973	29816
Murder	1	7
Robbery	30	112
Forcible Rape	30	123
Sex Assault	2	3
Arson	20	76
Burglary	751	3370
Theft from Motor Vehicle	1232	2827
Larceny	1196	4063
Stolen Property	61	201
Drug/Narcotic Violations	322	715

Notes: *not all types reported in this table. Source: Vermont Crime Information Center Online

Law Enforcement Resources

- **Response times by police, fire, ambulance**
- **Law enforcement agencies and personnel per capita (compare to other similar regions)**

Criminal Justice

- **Incarceration rates by race compared to general population (dept of corrections)**
- **Recidivism – (dept of corrections)**
- **% of statewide parolees live in Old North End (DOC)**
- **% of inmates reading level (also see Education)**
- **Rate of court dispositions for delinquency**

CIVIC ENGAGEMENT AND GOVERNANCE

Goal: Increase active individual and organizational participation in all levels of government by ensuring that government processes are open, transparent, and accessible.

Key Issues - Why This Is Important

- This section looks at the participation of residents in representative governance and decision making processes at the local levels. Civil and political rights are a fundamental aspect of democracy and human rights, protecting the ability of people to participate in politics and decision making by expressing views, protesting, having input and voting.
- Enabling democratic local decision making is one of the key purposes of local government and is also important in promoting the social, economic, environmental and cultural wellbeing of communities. Effective civil and political systems allow our communities to be governed in a way that promotes justice and fairness and supports people's quality of life.
- The population in our urban area is becoming increasingly diverse, with more people from different ethnic groups and cultural backgrounds. It is important that we understand how our institutions and processes can continue to support people's civil and political involvement. This understanding can also help us work to remove barriers that limit people's ability to exercise their civic rights and to participate in decision making.
- Leaders from various ethnic communities indicate a disconnect with city governance and representation.

Key Indicators

- **What percent of residents believe that they have an understanding of how their locally elected bodies (Councils, Select Boards, School Boards) make decisions?** (source: primary data collection through survey)
- **Do you feel you can access other groups and those who make decisions** (source: primary data collection through survey)
- **What percent of residents believed that the public has influence on the decisions that their locally elected bodies make?** (source: primary data collection through survey)
- **% Voter turnout for local level elections compared to registered voters and voting age population.**

- **% of eligible voters that vote**

% General Election Voter Turnout				
	2004	2006	2008	2010
Chittenden County	69%	59.9%	70.2%	52%
Vermont	70.7%	60.7%	72%	54%

Source: Vermont Secretary of State. http://vermont-elections.org/elections1/election_info.html

- **% minority populations serving on town and school boards** Source: Primary data collection
- **% women serving on town and school boards** Source: Primary data collection

Performance Measures of Strategies:

- **# Trainings to local government staff on doing culturally and linguistically competent outreach.**

SOCIAL CONNECTEDNESS

Goal: Increase opportunities to engage in the social fabric and activities of the community.

Key Issues - Why this is Important

- This section looks at how people come together, interact and network. Social connectedness provides an indication of community strength.
- The concept of community is fundamental to people's overall quality of life and sense of belonging. Informal networks and how people connect with others are important for strong communities and social cohesion. Confident and connected communities support social and economic development in our cities. Aesthetically pleasing surroundings positively influence residents and visitors, encouraging better care more for the environment. Strong communities have fewer social problems, are more adaptable in the face of change and when they do experience difficulty they have internal resources to draw upon.
- There are major health, economic and environmental benefits in developing opportunities for and participation in social interactions, recreation and leisure, arts and cultural activities.
- An individual's engagement in arts activities, particularly from a young age, encourages self-expression and self-understanding, as well as whole-brain development. Group attendance at art events gives community members a shared experience that is both aesthetically rewarding and contributes to cultivating and supporting a culture of art appreciation
- Communities care about each other more when residents from different cultural and economic backgrounds learn from each other and create personal connections.
- Build community strength by increasing the opportunities for residents to come together, interact, and network.
- Research indicates that people who experience loneliness suffer greater rates of depression, illness, addictions and increases crime in the community.
- Leaders from various ethnic communities indicate a desire to feel more a part of the larger community and for others to learn about their cultures.
- "Access to viable transportation options, both public and private, is lacking for refugees in Vermont. This gap acts as a significant barrier in the adaptation of refugees to their new homes and their acculturation to their new host communities. Furthermore, limited transportation options can in substantial ways restrict the autonomy and independence of refugees, leaving them dependent on the services and schedules of others, which in turn can adversely affect their ability to seek and secure gainful employment, receive necessary medical care, and access other goods and services vital to survival, such as food and clothing." (Source: *Transportation, Equity, and Communities at Risk: Refugee Populations and Transportation Accessibility in Vermont* UVM Transportation Research Center Report #10-018, Pablo S. Bose PhD, March 2011)
- Increase opportunities for underserved populations to be actively engaged in creative activities, as well as attend arts events

- Recreational opportunities are important contributors to Chittenden County's high quality of life.

Key Indicators

Overall Quality of Life

- **How do residents in CC feel about their overall quality of life?** (primary data - Survey residents about quality of life)

Diversity and Equity

- **60% Vermonters come from outside VT (Census)**
- **# of different languages spoken**
- **% of residents who feel positive about the increasing diversity of our region. (primary data - Survey residents about quality of life)**
- **% residents who feel racism is a problem. (primary data - Survey residents about quality of life)**
- **Discrimination complaints**

Connectedness

- **What is sense of local community in CC towns compared to VT compared to other states?** (primary data - Survey residents about quality of life)
- **% residents who feel they have positive interactions with their neighbors and can access support if needed.** (primary data - Survey residents about quality of life)
- **% residents who feel that their neighborhood has a strong sense of community.** (primary data - Survey residents about quality of life)
- **% of residents who have networks of family, friends &/or neighbors to interact with on a regular basis.** (primary data - Survey residents about quality of life)

Youth Development

- **% of students who spend 3+ hours/week volunteering** (YBRS)
- **% youth participating in 5+ hours of clubs/organizations outside of school (not incl sports)** (YBRS)
- **% youth who talk to their parents at least once a month about what they do in school** (YBRS)
- **% students who eat family meal 3+ days during past week** (YBRS)
- **% students who report having an adult in their life they can usually turn to for help and advice** (YBRS)

Arts and Culture

- **% of residents engaged in arts and cultural activities** (primary data - Survey residents about quality of life)

Performance Measures of Strategies:

- **# of social service programs that provide information in various languages and have multilingual and multicultural staff**
- **# of building open for public use**
- **% of County schools that have a policy supporting joint use agreements with the community** Source: VDHA
- **# of non-school functions per year** Source: Supervisory Unions
- **Number of hours of hands-on arts instruction in k-12 schools** (includes music, art, theater)
- **Number of youth participating in afterschool arts programs** (at school, private programs, town-based Parks & Rec programs, and with known arts organizations)
- **Number of scholarships (or total amount of scholarships) given to low income students and community members to attend classes** (Flynn, BCA)
- **Number of students attending Flynn school matinees** Source: Primary data collection
- **# of scholarships and tickets for organizations serving ethnically diverse populations** Source: Primary data collection
- **Board and executive composition on Advisory Boards of arts and cultural institution reflects the community (Board grid represents diversity of community).** Source: Primary data collection
- **Per capita spending on cultural opportunities** Source: Primary data collection from arts organizations
- **Amount of programming (and participation) at established art and cultural institutions** (Flynn, Echo, BCA, Fleming, Shelburne Museum, Maritime) Source: Primary data collection
- **Municipal investment in recreational programs**
- **Number of Participants in recreation programs**

INDICATOR INDEX

Demographics

- Population change in Chittenden County
- Population Growth Rate - The Chittenden County population growth rate has surpassed both VT and New England: 1990-2010 (add white and non-white)
- Percent of Residents Born in Vermont in Chittenden County and Vermont, 1960 – 2000 (add 2010)
- Percent of Residents Age 65+ in Chittenden County and Vermont, 1960 – 2000 (add 2010 and US)
- Percent of Residents Under Age 18 in Chittenden County and Vermont, 1960 – 2000 (add 2010 and US)
- Median Age in Chittenden County and Vermont, 1960 – 2000 (add 2010 and US)
- Share of non-white K-12 public school enrollment by Supervisory Union district
- Average Household Size in Chittenden County and Vermont, 1960 – 2000 (add 2010 and disaggregate by race)
- Percentages of Total Households that are Single Person Households in Chittenden County and Vermont, 1960 – 2000 (add 2010)
- Percentage of non-white households in each municipality
- Percentage of language other than English spoken in households in each municipality
- Percent of Residents who are White, Non-Hispanic in Chittenden County and Vermont, 1960 – 2000 (change to % non-white (census) (add 2010, reverse data to show non-white))
- Map % change in population by race/ethnicity by census tract
- Dissimilarity Index by County
- The distribution of racial or ethnic groups across a geographic area can be analyzed using an index of dissimilarity
- The distribution of racial or ethnic groups across a geographic area can be analyzed using an index of dissimilarity

Built Environment

LAND USE

- Percent of New Structures in Areas Planned for Growth: 1950 – 2010
- Net Acres of agricultural and natural resource land lost annually to development per new Resident
- Change in Average and Median Parcel Size
- Existing Development Density by Planning Area
- Data on agricultural uses that demonstrates that working landscape is being preserved
- Population per sq. mile.
- Change in housing and employment density.

- Percent of single family and multifamily by planning area.
- Acres and number of parcels of UVA Forest Land enrollment.
- Number of acres and percentage of total prime agricultural soils and soils of statewide significance ("statewide agricultural soils") in production and/or conserved for active agricultural production.
- The number of acres and percentage of total prime and statewide agricultural soils under conservation easement available for active farm use.
- The total number of acres of prime and statewide agricultural soils, the number of acres that are conserved, and the number of acres that have been converted to nonfarm use
- Working landscapes (farming, forestry, sand and gravel) comprise up to 25% of Chittenden County's land area, a decrease of 5% since 2003 due to residential development.
- Percentage of Chittenden County in current-use program
- The use of all prime and statewide agricultural soils and the percentage of total acres in (1) idle, (2) low-use, and (3) active agricultural production.
- The number of producers participating in conservation planning
- The number of producers participating in other soil monitoring and management programs.
- Number of farms with a net positive income.
- Number of acres of farmland in active agricultural production
- Dollars invested annually in farmland preservation
- The average price per acre of conserved farmland vs. not conserved farmland.
- The number of farm transfers that result in farms remaining in agricultural production and the percentage that are intergenerational transfers
- Number of acres of farmland conserved
- The number of farms that have implemented written nutrient management plans for improving water quality protocols and optimizing the use of fertilizer, manure, compost, and crop rotation to enhance soil health.
- The existence of a comprehensive statewide soil monitoring program
- Percentage of Vermont food products consumed by Vermonters.
- Direct sales by farm and type of product; direct sales as a percentage of consumer food expenditures
- Vermont food cooperatives' gross sales revenues from locally produced food as percentage of their total gross sales revenue
- The number of schools hosting Farm to School educational programs
- Total # Chittenden County sites with completed corrective action
- # Chittenden County sites with completed corrective action
- Total # Chittenden County sites that have been reported with contamination
- # Chittenden County sites that have been reported with contamination (by year)
- Number of historic and archaeological sites
- Acres of historic and archaeological sites
- Number of visitors at historic sites.

HOUSING

- % households spending over 30% of income on housing expenses (owners and renters).
- Metro and non-metro vacancy rate for renters and owners.
- # of housing units and average assessed value of each unit by zoning district or Planning Area.
- Homeownership rate by race
- # of homeless at point in time count (PIT).
- # of new housing units by tenure (rental and ownership) mapped with Planning Areas
- Accessibility: Number of publically subsidized wheelchair accessible rental units.

TRANSPORTATION

- Percent of workers commuting by non-Single Occupant Vehicle (SOV) mode (walk, bike, transit, carpool, telecommute).
- VMT Per Capita.
- Adequate Infrastructure Maintenance Investment Ratio
- Share of housing and employment in CCTA service area (¼ mile of transit route)
- Percent of households paying more than 45% of household income on transportation and housing
- Percent of low income/minority/disabled/auto-less/over aged 65 households within ¼ mile of a transit route, sidewalk or bike path/lane
- Vehicle crash rate per annual vehicle miles traveled (VMT)
- Number of reported pedestrian and bicycle crashes per capita
- Miles of sidewalks and shared use paths per roadway mile
- Transit passengers per service hour
- Reduction in Vehicle Hours of Travel per capita
- Number of intermodal nodes serving two or more travel modes
- Share of TIP funding for system preservation
- Volume of transportation related Green House Gas (GHG) emissions per household
- Transit operating costs per passenger mile

ENERGY

- Annual electric savings (MWh and MW) by sector and location.
- Annual natural gas savings (therms).
- Annual fossil Fuel savings (MMBTU)
- Total Energy Savings.
- Percent of Energy Saved through Efficiency
- Total resource benefits of programs
- Number and capacity of sites that generate energy with -photovoltaics - hydropower - solar thermal/hot water - biomass - wind located in Chittenden County.
- % of electricity generated by renewables not owned by utilities.
- Total renewable energy as a % of total energy used/% of SPEED Goal Achieved.
- Electricity Reliability – power outages
- Line efficiency

- Efficiency savings from geo-targeting
- Vermont Fuel Prices vs. Demand
- % of income spent on energy and utility costs

INFRASTRUCTURE

- Current Capacity v. Capacity Needed for Growth Projections in Service Areas.
- Water Rates Per Capita.
- Municipal Dollars in public investment in Water Supply.
- In 2007, 89% of buildings are within 500' of a public street serviced by cable and 86% of building are within a DSY coverage area.
- Current Capacity v. Capacity Needed for Growth Projections in Areas Planned for Growth
- Waste Water Rates Per Capita.
- Municipal Dollars in public investment in Waste Water management.
- Total Wastewater phosphorus load, by lake segment watershed
- % of impervious area that is under storm water management.
- # acres of impervious surface by planning area.
- % of land area in stormwater impaired watersheds in need of treatment that is receiving treatment.
- Municipal Dollars in public investment in Storm Water management.
- Pounds of Waste Disposed/Capita/Day for MSW (Municipal Solid Waste) and C&D (Construction Debris).
- Recovery Rate of Mandatory Recyclables

HAZARD MITIGATION

- % and number of structures in special flood hazard areas in Chittenden County

Economic Infrastructure

ECONOMY

- Recent Chittenden County job growth has been stronger than the U.S., New England and Vermont.
- Although still below the 2000 peak, job growth in the County has improved since 2009:Q3
- Since peaking in 2008 the County's business count has dropped by 101
- Labor force growth in the Burlington NECTA* has surpassed the U.S. in the past year.
- The unemployment rate in the Burlington NECTA* has declined faster than the New England and US rates over the past two years.
- Disaggregate unemployment by race

- Gross Domestic Product - GDP growth tracks closely in the MSA, the State and in New England but lags the US (2001-2010)
- Coincident Index - Current economic conditions in Vermont are the best in three years.
- The Vermont leading index* is at the highest in 12 years
- Employ 68% of total in Chittenden County (Need to fill-in data)
- The number of subsectors with high location quotients shows a diversified employment base that offers opportunities for continued economic diversification and a broad base on which the County's economy can flourish.
- Number of net new jobs by target industry sector (data being acquired)
- Number of net new companies in target sectors
- Number of new business filings per year
- Patents
- Number of post-secondary science and engineering students (primary data collection needed)
- Value of goods and services exported (primary data collection needed)
- Gross licensing revenue from commercialized university research (primary data collection needed)
- Number of locally owned banks (primary data collection needed)
- Employment by Major Industry Sector 2010
- Percent of total wages by business sector
- Total Employment Participation Rate in Private Industry by race & gender – 7% minority, 48% women
- Wages by race and gender
- Median age of workforce by occupation
- Women-owned firms in 2007 in Chittenden County = 28.2%, VT= 26%
- Minority owned firms in Chittenden County
- Location of available land (zoning) and space in comparison to the Planning Areas (areas planned for growth) (Add map)
- Available Building Space or Vacancy Rates in Chittenden County
- Land Available in Chittenden County Business Parks
- Amount of non-residential building square footage permitted in areas planned for growth
- Percent of land zoned for potential non-residential development in areas planned for growth
- Net build-out capacity of non-residentially zoned land in areas planned for growth
- Average time spent commuting to work

HOUSEHOLD FINANCIAL SECURITY

- Median household income in the County has declined for two consecutive years.
- Household income by race
- # of households in poverty
- Average wage in the County is higher than the State.
  Real per capita income in the Burlington-So. Burlington MSA now exceeds the US
- Combined Housing + Transportation Costs as a proportion of area median income (derived from the H+T Affordability Index, requested by PSC)

- Percent of CC households spending more than 45% of monthly income on housing and transportation.
- Number of underemployed individuals
- # of households below poverty level, disaggregate by race
- Income inequality
- Percentage of county adult & youth population without health insurance

Natural Systems

ECOLOGICAL SYSTEMS

- Change of Acreage (total acres/block) in Habitat Blocks.
- Average Change in Patch Shape Index (PSI) for Habitat Blocks that Reduce in Size, by Town.
- Total Feet and % Change (of the Total) of Wildlife Crossing Values per Category (1-5)
- Average % Change in Annual Average Daily Traffic for Each Crossing Category
- Total Gain/Loss of Wetlands.
- Total Acreage of Wetlands Restored.
- # of Priority Surface Waters/Impaired Waters Occurring in Chittenden County
- Total Length of Stream Segments with Forested Buffer 50, 100 and 330'
- % of Occurrences of RT&E Plants, Animals and Natural Communities on
- Conserved land
- UVA land
- Lands with no documented protection
- Number of Invasive Non-native Aquatic Species.
- Number of Invasive Non-native Terrestrial Species.
- Number of Invasive Non-native Insect Species.
- Number of Spread Prevention Programs that address Non-native Invasive Aquatic Species
- Number and Length of Impaired Rivers/Streams; Streams Stressed and in Need of Further Assessment; and Number of Streams with a TMDL Management Plan.
- Macroinvertebrate Ratings for Tributaries in Chittenden County
- Burlington Bay, Mallet's Bay and Inland Sea Annual Mean Total Phosphorus Concentrations
- Percent of Impervious Surface by Watershed
- # of Reported Petroleum Spills/Leaks
- # of Reported Contaminated Wells
- # of Reported Septic System Failures. Source: The number of Wastewater Permits issued for replacement systems.
- Main Lake Annual Mean Total Phosphorus Concentrations
- Mean Total Phosphorus Loading Rates to Lake Champlain from the Winooski River, Lamoille River, LaPlatte River
- Monitored ground-level ozone and fine particulate matter concentrations

- Regional greenhouse gas emissions
- Annual number of days classified as “unhealthy for sensitive groups,” “unhealthy,” or “very unhealthy” based on the Air Quality Index.
- Rates of Asthma
- Climate Change - Average minimum and maximum temperatures (available for Burlington airport from the National Weather Service:

SCENIC AND RECREATIONAL RESOURCES

- Quantity of Scenic and Recreational Resources – Percent of Chittenden County land area that includes scenic and recreational resources that are open to the public.
- Access to Scenic and Recreational Resources – Percent of households within ½ mile of scenic and recreational resources.

Social Community

EDUCATION, KNOWLEDGE & SKILLS

- Statewide Assessment of Kindergarten Readiness across 5 domains (AHS, United Way)
- Overall STARS Ratings for state regulated childcare and preschool programs
- % of Chittenden County families paying more than 25% of income towards child care by race and (head of household?) gender
- NECAP Reading proficiency GAP disaggregated by Free and Reduced Lunch status, gender, race, disability, ELL.
- NECAP Math proficiency GAP disaggregated by Free and Reduced Lunch status, gender, race, disability, ELL. (Track subject/grade (3rd, 8th, 11th) over time)
- Suspensions (in-school or out-of-school) % of students, % of students by race, FRL, ELL
- Truancy rate by race, FRL. ELL (United Way)
- Drop-out rate, by race, FRL, ELL
- Reading level of inmates (see also Public Safety & Criminal Justice)
- Chittenden County graduation rates disaggregated by income, gender, race, FRL, ELL. Source: US Census
- # completing GED
- # of CC Community High School of Vermont (inmates)
- % of Chittenden County high school graduates that attend post-secondary institutions, training, or apprenticeship programs
- Level of education attained by gender, race (by town)
- % of high school students scoring high proficiency science and math
- Total # of graduates from training programs
- Graduation rates from Chittenden County Colleges and Universities

HEALTH

- Life expectancy

- Infant mortality rate
- Low birth weight babies
- Self-reported Health Status
- Tobacco use
- % adults in Burlington HSA who smoke cigarettes
- % adults in Burlington HAS who are exposed to second hand smoke
- % youth in CC schools exposed to second hand smoke in the same room
- % youth in CC schools exposed to second hand smoke in a car
- % youth in CC schools who have smoked in the past 30 days
- % adults/children not eating 5 or more fruits and vegetables per day
- % adults not getting 30 minutes of physical activity at least 5 days per week
- % children not getting 60 minutes of physical activity per day past 7 days per week
- % adults with no leisure time physical activity
- % children with 3 or more hours per school day of screen time
- % of adults in CC engaging in binge drinking
- % of adults in CC being heavy drinkers
- Environmental hazard “points” per acre
- Lead poisoning rate
- % adults/children with asthma
- % hospitalization due to asthma
- % of adults in Burlington Health Service Area reporting ever having asthma
- Average annual hospitalization rate for asthma
- % of adults in the Burlington Health Service Area reporting that they do not have insurance coverage
- % of Vermonters underinsured
- % of people in CC and Grand Isle County that are covered by any state health insurance program
- % of adults in the Burlington Health Service Area reporting that they do not have a doctor
- % of practicing primary care providers
- People needing medical care, dental care, diagnostic test, prescribes medicine, mental health care, but did not get it because of cost

PUBLIC SAFETY & CRIMINAL JUSTICE

- Perceptions of safety depending on the location and time of day (primary data collection through survey)
- Since 2008 there has been a state increase in the rate of substantiated cases of child abuse and neglect.
- Child Maltreatment rate per 1000 Source: DCF Economic Services (VDH indicator not available at VDH)
- % of adults that had a fall in the past 3 months (BRFSS)
- The number of falls requiring hospitalization of those over 65 years?

- The overall rate of crime in CC vs VT
- Violent Crime Rate (per capita) vs non-violent Source: VCIC (VDH indicator not available at VDH) – (AHS list)
- % Violence by current or former intimate partner Source: BRFSS (state level only) (VDH
- Rate of adult abuse and neglect victims (AHS list)
- Rate of petitions filed for Relief from Domestic Abuse (AHS list)
- Rate of sexual assault (AHS list)
- Race data on traffic stops (Burlington, Winooski, and S. Burlington)
- Response times by police, fire, ambulance
- Law enforcement agencies and personnel per capita (compare to other similar regions)
- Incarceration rates by race compared to general population (dept of corrections)
- Recidivism – (dept of corrections)
- % of statewide parolees live in Old North End (DOC)
- % of inmates reading level (also see Education)
- Rate of court dispositions for delinquency

CIVIC ENGAGEMENT AND GOVERNANCE

- What percent of residents believe that they have an understanding of how their locally elected bodies (Councils, Select Boards, School Boards) make decisions? (source: primary data collection through survey)
- Do you feel you can access other groups and those who make decisions (source: primary data collection through survey)
- What percent of residents believed that the public has influence on the decisions that their locally elected bodies make? (source: primary data collection through survey)
- % Voter turnout for local level elections compared to registered voters and voting age population.
- % of eligible voters that vote
- % minority populations serving on town and school boards Source: Primary data collection
- % women serving on town and school boards Source: Primary data collection

SOCIAL CONNECTEDNESS

- How do residents in CC feel about their overall quality of life?
- 60% Vermonters come from outside VT (Census)
- # of different languages spoken
- % of residents who feel positive about the increasing diversity of our region. (primary data - Survey residents about quality of life)
- % residents who feel racism is a problem. (primary data - Survey residents about quality of life)
- Discrimination complaints
- What is sense of local community in CC towns compared to VT compared to other states? (primary data - Survey residents about quality of life)

- % residents who feel they have positive interactions with their neighbors and can access support if needed. (primary data - Survey residents about quality of life)
- % residents who feel that their neighborhood has a strong sense of community. (primary data - Survey residents about quality of life)
- % of residents who have networks of family, friends &/or neighbors to interact with on a regular basis. (primary data - Survey residents about quality of life)
- % of students who spend 3+ hours/week volunteering (YBRS)
- % youth participating in 5+ hours of clubs/organizations outside of school (not incl sports) (YBRS)
- % youth who talk to their parents at least once a month about what they do in school (YBRS)
- % students who eat family meal 3+ days during past week (YBRS)
- % students who report having an adult in their life they can usually turn to for help and advice (YBRS)
- % of residents engaged in arts and cultural activities (primary data - Survey residents about quality of life)

BUILT ENVIRONMENT GOAL CROSS REFERENCES	*Land Use Pattern*	*Working Lands*	*Brownfields*	*Historic Resources*	*Housing*	*Transportation*	*Energy Consumption*	*Renewable & Distributed Energy*	*Energy Production, Transmission, & Distribution*	*Public Water Supply*	*Public Wastewater*	*Stormwater*	*Communications*	*Waste Reduction*	*Hazard Mitigation*	
Land Use																
Land Use Pattern	X	X		X	X	X	X									
Working Lands	X	X														
Brownfields			X													
Historic Resources	X			X												
Housing	X				X	X		X								
Transportation	X				X	X										
Energy																
Energy Consumption	X						X									
Renewable & Distributed Energy					X		X	X	X							
Energy Production, Transmission & Distribution								X	X							
Infrastructure																
Public Water Supply										X						
Public Wastewater											X					
Stormwater												X				
Communications													X			
Waste Reduction														X		
Hazard Mitigation															X	
Economic Infrastructure																
Employment																
Employer Clusters																
Entrepreneurship		X														
Economic Diversity																
Workplace Diversity																
Economic Developlemt Location	X				X								X			
Household Financial Security					X											
Ecological Systems																
Habitats	X															
Water Quality	X									X	X					
Air Quality							X	X	X							

BUILT ENVIRONMENT TOPIC CROSS REFERENCES	*Land Use Pattern*	*Working Lands*	*Brownfields*	*Historic Resources*	*Housing*	*Transportation*	*Energy Consumption*	*Renewable & Distributed Energy*	*Energy Production, Transmission, & Distribution*	*Public Water Supply*	*Public Wastewater*	*Stormwater*	*Communications*	*Waste Reduction*	*Hazard Mitigation*	
Scenic & Recreational Resources	**X**			**X**												
Education, Knowledge & Skills																
Early Childhood Education																
K-12 Results																
Educational Attainment																
Career Training																
Health																
Healthy Behaviors	**X**															
Environmental Factors																
Access to Quality Health Services						**X**										
Public Safety & Criminal Justice					**X**	**X**									**X**	
Civic Engagement & Governance																
Social Connectedness					**X**	**X**										

ECONOMIC INFRASTRUCTURE GOAL CROSS REFERENCES	*Employer Clusters*	*Entrepreneurship*	*Economic Diversity*	*Workplace Diversity*	*Economic Development Location*	*Household Financial Security*
Land Use						
Land Use Pattern					**X**	
Working Lands						
Brownfields						
Historic Resources						
Housing						**X**
Transportation						**X**
Energy						
Energy Consumption						
Renewable & Distributed Energy						
Energy Production, Transmission & Distribution						
Infrastructure						
Public Water Supply						
Public Wastewater						
Stormwater						
Communications					**X**	**X**
Waste Reduction						
Hazard Mitigation						
Economic Infrastructure						
Employment						
Employer Clusters	**X**					
Entrepreneurship		**X**	**X**			
Economic Diversity		**X**	**X**			
Workplace Diversity				**X**		
Economic Developlemt Location					**X**	
Household Financial Security						**X**
Ecological Systems						
Habitats						
Water Quality						
Air Quality						
Scenic & Recreational Resources						
Education, Knowledge & Skills						
Early Childhood Education						
K-12 Results						
Educational Attainment						
Career Training		**X**	**X**	**X**		
Health						
Healthy Behaviors					**X**	
Environmental Factors						

ECONOMIC INFRASTRUCTURE GOAL CROSS REFERENCES	*Employer Clusters*	*Entrepreneurship*	*Economic Diversity*	*Workplace Diversity*	*Economic Development Location*	*Household Financial Security*
Access to Quality Health Services						
Public Safety & Criminal Justice					**X**	
Civic Engagement & Governance				**X**		
Social Connectedness				**X**	**X**	

NATURAL SYSTEMS GOAL CROSS REFERENCES	*Habitats*	*Water Quality*	*Air Quality*	*Scenic and Recreational Resources*
Land Use				
Land Use Pattern		**X**		**X**
Working Lands				
Brownfields				
Historic Resources				**X**
Housing				
Transportation			**X**	
Energy				
Energy Consumption			**X**	
Renewable & Distributed Energy			**X**	
Energy Production, Transmission & Distribution			**X**	
Infrastructure				
Public Water Supply		**X**		
Public Wastewater		**X**		
Stormwater				
Communications				
Waste Reduction				
Hazard Mitigation				
Economic Infrastructure				
Employment				
Employer Clusters				
Entrepreneurship				
Economic Diversity				
Workplace Diversity				
Economic Developlemt Location				
Household Financial Security				
Ecological Systems				
Habitats	**X**	**X**		
Water Quality		**X**		
Air Quality			**X**	
Scenic & Recreational Resources				**X**
Education, Knowledge & Skills				
Early Childhood Education				
K-12 Results				
Educational Attainment				
Career Training				
Health				
Healthy Behaviors				**X**
Environmental Factors		**X**	**X**	
Access to Quality Health Services				
Public Safety & Criminal Justice			**X**	
Civic Engagement & Governance				
Social Connectedness				**X**

SOCIAL COMMUNITY GOAL CROSS REFERENCES	Early Childhood Education	K-12 Results	Educational Attainment	Career Training	Healthy Behaviors	Environmental Factors	Access to Quality Health Services	Public Safety & Criminal Justice	Civic Engagement and Governance	Social Connectedness
Land Use										
Land Use Pattern					X					X
Working Lands										
Brownfields										
Historic Resources										
Housing								X		X
Transportation					X		X	X		X
Energy										
Energy Consumption										
Renewable & Distributed Energy										
Energy Production, Transmission & Distribution										
Infrastructure										
Public Water Supply										
Public Wastewater										
Stormwater										
Communications										X
Waste Reduction										
Hazard Mitigation						X		X		
Economic Infrastructure										
Employment										
Employer Clusters										
Entrepreneurship				X						
Economic Diversity				X						
Workplace Diversity									X	X
Economic Developlemt Location					X			X		X
Household Financial Security										
Ecological Systems										
Habitats										
Water Quality										
Air Quality								X	X	
Scenic & Recreational Resources										X
Education, Knowledge & Skills										
Early Childhood Education	X									
K-12 Results		X	X							
Educational Attainment		X	X							
Career Training				X						
Health										

SOCIAL COMMUNITY GOAL CROSS REFERENCES	*Early Childhood Education*	*K-12 Results*	*Educational Attainment*	*Career Training*	*Healthy Behaviors*	*Environmental Factors*	*Access to Quality Health Services*	*Public Safety & Criminal Justice*	*Civic Engagement and Governance*	*Social Connectedness*
Healthy Behaviors					**X**					
Environmental Factors						**X**		**X**		
Access to Quality Health Services							**X**			
Public Safety & Criminal Justice						**X**		**X**		**X**
Civic Engagement & Governance									**X**	**X**
Social Connectedness								**X**		**X**