

Green Technology Park Report for the Transit Village Area

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Concepts and Definitions

Cluster: A business concept, defined by Harvard Professor Michael Potter as, “a geographically proximate group of interconnected companies and associated institutions in a particular field, linked by customer, supplier, or other relationships.”

Clean Tech(nology): An industry moniker that embraces energy, air and water efficiency and technological improvements, waste management, as well as new agricultural innovations and the natural and organic products industry.

Green Tech(nology): An industry moniker referring mainly to the clean or renewable energy sector including solar, biofuels, wind, fuel cells, and energy efficiency.

Business incubator: A supporting organization designed to accelerate the growth and success of entrepreneurial firms at the beginning of their existence. They provide necessary support and can be either for-profit or non-profit and may specialize in a particular industry or not.

Eco-Industrial Development: Networks of businesses that work with each other and in conjunction with their communities to improve resource productivity, expand markets, eliminate pollution, and catalyze economic growth through enhanced profits, wages, and local investment.

LEED-ND Rating System: The LEED (Leadership in Energy and Environmental Design) for Neighborhood Development rating system integrates the principles of smart growth, urbanism, and green building into the first national standard for sustainable neighborhood design. LEED certification provides independent, third-party verification that a development's location and design meet accepted high standards for environmentally responsible, sustainable, development.

Executive Summary

As part of the planning process for the Transit Village Area in Boulder, city staff has researched the feasibility of the idea of one part of the area being developed as a type of green technologies business center. This has included research about business clusters, eco-industrial parks, business incubators, and the clean tech and green tech markets. Research has focused on the broad realm of clean energy technologies, or clean tech, which includes both renewable energy and natural foods. There are many reasons for green development models to take advantage of the Transit Village area; this report outlines some of the opportunities and constraints

The market for green tech is an emerging one, but the international, national, regional, and local trends are all pointing towards increased opportunities as time goes on. Indeed, the competition for such development is already heating up, with the West Coast leading the way and regional cities like Austin, Texas trying to stake a claim to being the hub of clean tech. Boulder is in many ways an ideal location for this type of development, and the current changes in the area are just making the opportunity stronger. The Transit Village Area Plan provides a template for what the area could look like, and as redevelopment occurs the models growing around the country can be used to create cutting edge development in Boulder.

This report outlines the national and regional markets for clean tech and notes some of the recent changes. It focuses in on Boulder to try and capture the existing opportunities and show that this is an ideal city for clean tech to take place. By looking at case studies from around the nation and globe, the experiences of others are offered along with the lessons they can teach. The factors that make the Transit Village Area a prime area for such a park to evolve are detailed in the final section, and some of the city documents detailing the research process are included in the Appendix.

The National and Regional Energy Market

Nationally, there is a concerted effort underway to increase investment in renewable energy technologies. The energy market as a whole is turning increasingly to renewable energy sources to complement coal and natural gas reserves and create an independent energy economy. Venture capitalists are watching smaller firms to see which have the potential to scale up and realize the profits from these market opportunities.

The national market for renewable energies is spurred on by hopes for energy security and rising traditional fuel costs, and is only going to become more of a prominent issue. In his 2006 State of the Union Address, President Bush announced the Advanced Energy Initiative that included a 22% increase in federal funding for renewable and clean energy. With Al Gore's movie An Inconvenient Truth reaching wider audiences than ever and countries across the globe refining and implementing renewable energy infrastructure, the market is in a ripe state for investment.

As nationally recognized venture capitalist John Doerr stated, "Entrepreneurs are passionate about pursuing clean and affordable water, power and transportation. We're seeing exciting, sustainable and scaleable ventures, including biofuels (like ethanol), energy storage and energy conservation. Greentech could be the largest economic opportunity of the 21st century." American and world leaders are calling for alternatives to \$60-a-barrel oil, and entrepreneurs are rising to the challenge." He echoes a trend apparent in the venture capital market; 9.6 percent of the venture capital in America was invested in clean tech in 2006 compared to 4.2% in 2005. Revenues in the clean energy sector also rose 39% in 2006 to \$55 billion.

Those numbers represent a very real trend in renewable energy that Colorado is well positioned to try and capture a piece of. Colorado's renewable energy economy has fluctuated slightly, but in general the upwards trend is obvious¹. There is a concerted effort emanating from State government to brand Colorado as the "Balanced Energy Capital of the West" by taking advantage of our coal resources as well as our renewable energy potential. The recent election of a Governor committed to clean energy and new legislation in the state capital² are recent signs of the state's commitment. The revitalized Governor's Office of Energy is a powerful resource for change that provides assistance for Colorado companies and individuals to help create change statewide.

The Metro Denver Economic Development Council profiled the renewable energy industry in Colorado as part of their overall survey of Colorado industries. Metro Denver ranked seventh out of the 50 largest metro areas in renewable energy employment concentration in 2006 and housed about 88% of Colorado's renewable energy industry.

¹ The Colorado Economic Outlook Report 2007 shows an overall upwards trend of growth for Colorado's renewable energy employment, with a small decrease in 2005.

² House Bill 1281 requires that 20% of the energy for the public utilities in Colorado come from renewable sources by 2020, HB 1279 extends tax credits to renewable energy generation, and HB 11150 established a Clean Energy Authority to fund additional transmission infrastructure. Senate Bill 246 Established a Clean Energy Fund to advance renewable energy and energy efficiency throughout the state while SB 145 establishes funding for cities and counties to establish incentives for renewable energy technologies.

The renewable energy sector employment concentration is 0.5% in Metro Denver compared to 0.2% nationally. About 39% of renewable employment is located in Denver County, 35% is located in Jefferson County and 24% is located in Boulder County.

Different cities and institutions in Colorado are all taking steps to engage in the new energy economy. Denver Mayor John Hickenlooper has committed to getting at least two renewable energy powered plants online in the next couple of years, and with the release of Greenprint Denver a number of additional energy targets are outlined³. The Northern Colorado Clean Energy Cluster is well on its way to “serv(ing) as a clearinghouse to connect entrepreneurs and major power users with researchers and government officials, encouraging innovation, new job creation and investment in the region.” The Colorado Renewable Energy Collaboratory has linked the three major research universities of CU, CSU, and the School of Mines with NREL (the National Renewable Energy Laboratory) to form a coalition to develop and propagate the spread of renewable energy technology. Colorado is well positioned to be a regional leader in green energy, and is trending in that direction already.

³ Greenprint Denver calls for a number of renewable energy strategies to be followed and goals to be met, including:

- Subject to approval by Xcel Energy Corporation, construct a solar power plant capacity capable of powering the equivalent of 1,000 homes.
- Through a partnership with Waste Management Inc., the contract operator of Denver Arapahoe Disposal Site, begin construction of a 3.2-megawatt landfill [gas-to-energy power plant](#), capable of powering the equivalent of more than 1,500 homes. The plant will use gas naturally created by landfill materials.
- Reduce energy use by 1 percent per year, measured per passenger at DIA and per building square foot in city government facilities.

Boulder Renewable Energy Resources and Market

Boulder is a vibrant city that attracts top-notch companies with a renowned high quality of life, proximities of world-class research institutions, a wealth of innovative talent and a committed community. Creativity is abundant, capital is available, local resources are abundant, and the market is emerging. By being located in Boulder, companies have proximate access to NREL(the National Renewable Energy Laboratory), NREL's wind testing facility, and immediate access to CU-Boulder, a leading institution in the renewable energy and business entrepreneurship fields. As the first city in the nation to voluntarily tax themselves to support climate change initiatives and decrease their carbon footprint, Boulder is the kind of progressive political atmosphere many more green focused companies are looking to locate in. Additionally, within Boulder there are many existing resources for a renewable energy business park model.

Naturally Boulder is one piece of the clean tech equation that is an excellent model of a similar businesses banding together to market themselves and Boulder on a national level. By combining resources of variously sized natural foods companies and capitalizing with extensive marketing, Naturally Boulder has successfully branded the city as a hub for one of the main components of the clean tech industry. The opportunity to partner or model after Naturally Boulder to brand Boulder as a hub of Green Energy research and development is immense enough that one of the leading innovation incubators in Boulder recently launched a new program to assist such companies⁴.

CU-Boulder is a remarkable asset with good potential for advancing the Green Tech Park concept. The University has recently committed to going carbon neutral in the not-to-distant future, and it is a founding member of the Colorado Renewable Energy Collaboratory. In addition, the Leeds School of Business has a large grant funding a Sustainable Ventures Initiative through the Deming Center for Entrepreneurship, charged with focusing on these green businesses. In addition, the university has a Research Park with many similar ideas to a green tech park on their East Campus. While the Park has not been a very successful model to this point⁵, it is certainly instructive for strategies to learn from and could be another good place for Clean tech ventures to locate.

Another resource available in Boulder is the Boulder Innovation Center, an institution that provides advice and consultation for a variety of business ventures. They work with CU in a tech transfer program that identifies good business plans and helps to recruit management teams in the pre start up phase. They also help established companies (between a half and one and a half million in sales) to make the leap to a larger level. While not set up to incubate start-ups or assist companies that aren't already somewhat successful, they have recently set-up a focus to help clean tech companies(see footnote 4). As a valuable city resource, the Boulder Innovation Center could play a significant role in trying to keep successful start-up renewable technology companies in Boulder.

⁴ The Boulder Innovation Center (<http://www.boulderinnovationcenter.com>) has launched a focus area in clean technology in Fall of 2007 to help develop these types of businesses. For more information, contact Linda Olsson, the Energy Program Manager at linda@boulderinnovationcenter.com

⁵ Some of the reasons cited for sub-par performance include the University's insistence on only leasing the ground, requirements for University affiliation, and cheaper rents in other places

Boulder's Center for Resource Conservation is a nationally recognized organization that provides a veritable cornucopia of services to community members to assist with energy education and efficiency measures, among other activities. They are experts at finding funding sources for environmental programs, and provide green building services and energy audits in addition to running the Boulder Resource yard of recycled construction materials. In addition, they are the organization behind the planned Energy Center of the Rockies, an excellent anchor tenant that is planning on locating in the heart of this potential new district.

The Boulder Renewable Energy & Energy Efficiency Working Group (BREEE) is another strong local network made up of concerned citizens that has regular newsletters with a circulation of 850 people and an active listserve.⁶ This dedicated group of local citizens provides a direct conduit to industry professionals and interested funding sources that could be utilized for generating design and financing assistance as well as creating the kind of buzz that a project of this magnitude would benefit from. They have been instrumental in helping the city pass the Carbon Tax and are extremely effective at organizing behind topics related to renewable energy.

⁶“The Boulder Renewable Energy & Energy Efficiency Working Group (BREEE) is an all-volunteer group of citizens and organizations promoting the use of energy efficiency and renewable energy to cost effectively reduce greenhouse gas emissions and address the challenge of global warming”

Case Studies

The following case studies provide examples of situations where concepts similar to green technology parks have been or are in the process of being implemented. While specific direct comparables are still in short supply, there are many models out there that illustrate a variety of inherent ideas and can provide guidance for a green technology park to work in Boulder. Many of the projects share themes of directed political will and/or government assistance, and in the right environment they can thrive.

US Case Studies

One of the most exciting case studies to watch will be the environmentally friendly business park scheduled to break ground Fall 2007 in Austin, Texas. Balcones Resources, Inc, a large recycling and alternative fuel supplier, has recently bought 125 acres in south Austin along the railroad tracks, and they intend to use the majority of the land as a “environomics park.” They will need only about 15 acres of the site for their operation, and the remainder is being marketed to green-focused companies in areas such as green-energy use, alternative energy research, and sustainable recycling initiatives. Lara Valentine, director of economic development for clean energy at the Greater Austin Chamber of Commerce, is enthusiastic about a private company taking this step and says, “We are excited to be able to market this as an enhanced feature for attracting other clean-energy companies to the city.”

Austin is extremely well positioned to pull off such a development because of the wealth of resources it has for green development and businesses as well the strong political will. They are home to the Clean Energy Incubator within the Austin Technology Incubator, and the director, Joel Serface, estimates there are perhaps hundreds of green-focused companies in the region flying under the radar. He credits progressive local initiatives, with drawing interest from companies nationwide and notes, “because of its history, companies view Austin as a better place to be than other parts of the country.” In addition, Mayor Will Wynn, has stated that Austin “will be known as the Clean Energy Capital of the World,⁷” and the city is actively pursuing that goal.

The Chicago Center for Green Technology provides another appropriate model to look at as far as the Transit Village Area. This former auto pound and illegal dumping site was taken over by the Chicago Department of Environment, remediated, and the existing building was renovated using the greenest design strategies then available (1999-2002). The building serves as a demonstration center, informational resource, and incubator space for green businesses. The surrounding area is slowly evolving into a green-themed development, with the headquarters of a large Landscape Architecture firm built adjacent which is landscaping and further developing more of the property to attract more green businesses.

⁷ He went further to say, “Austin’s dedication to green building, renewable and clean energy and conservation has put us on the forefront of the national debate.” The US conference of mayors recently named Mayor Wynn to head the National Energy Committee.

While the limited available land and mixed-use environment in the Transit Village Area may necessarily limit the intensity of the industrial processes that will occur, some of the eco-industrial parks in the US demonstrate some conceptual synergies that could work within the area. The following graphic of an Eco-Industrial Park in Chattanooga, Tennessee, is fairly representative and shows the ways a site can be designed to harness by-products of one industry to make new products for another.

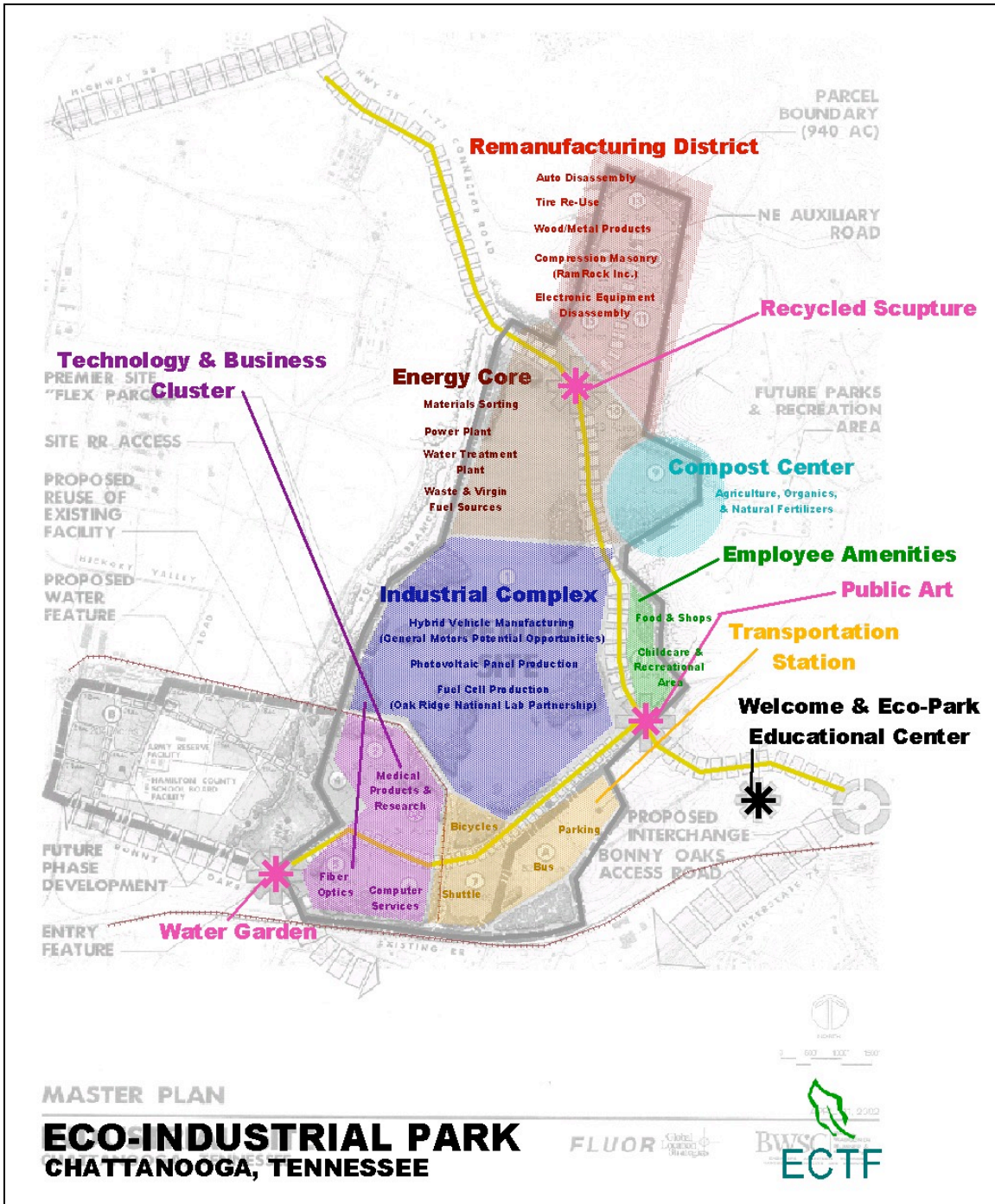


Figure 1. Typical Eco-Industrial Park Model (courtesy of ECTF)

In Sonoma Valley, California, a private developer is creating a community with incubator space and a plethora of amenities in a very green development to attract entrepreneurs and the so-called “creative class” to enliven the area. The Sonoma Mountain Village business cluster will have space for 15-25 start-up companies averaging about 600 square feet that will rent for below market and come with a built in support and mentoring system. The entire project will be powered by one of the largest solar arrays in the nation, and the markets they are targeting are clean tech (referred to as Sustainable Resources) and Life Science/Medical Devices. Venture capitalists are not expected to take an active role in the incubator spaces but will be active on the advisory board.

The important aspects of this development as it relates to the Transit Village are that it was initiated by a private developer and integrates a high percentage of residential. There is some partnering with local universities, but they are waiting on success to commit any resources, and there is no government assistance. By trying to create a vibrant and visually appealing working area as a central piece of the development, they are providing an amenity for neighbors that will in turn demand higher premiums for the residential component.

International Case Studies

Vancouver, Canada has recently seen the development of the Vancouver Island Technology Park, which has been extremely successful. Opened in November 2001, this 35 acres site’s former Glendale Lodge building was renovated and added on to with a conscious attempt at green building design for both environmental and economic reasons. The green building guidelines highlight the economic savings that result from lower operating costs, “future-proofing”, a positive corporate image, and increased worker productivity in addition to being good for the environment. Because the local government initiated the project on property they owned and then sold it to the local university, there was a high degree of control over which tenants would locate in the Park. Their mandate is to serve as a regional hub, providing services, physical infrastructure and a province-wide network to accelerate the profitable and sustainable commercialization of technology. Their tenant guidelines stipulate a number of green practices, and they focused on complimentary industries that would work in a cluster, including representatives from Information, Communication, Technology (ICT); Wireless; New Media; Life Science; Environmental Technology; Power Technology/Energy; and Ocean Technology.

The economic impact statement released in 2006 shows that in aggregate, the total dollar impact in 2005 of these 28 tenants has been \$280 million dollars on the British Columbia economy while attributing 2,023 jobs. The Park is being hailed as a model of successful development, and they have been deluged with requests for information and tours. They have managed to create a thriving business and mixed-use community in a great place. In the words of Dale Gann, VP for the park, “If we create environments where people want to live and work, the creative people will come and that will, in turn, attract good companies and good jobs.” Just recently, the Vancouver Island Technology Park has

released a 2007 master plan, an excellent primer for the industry full of good advice for other such parks.

Another model that has been adopted is in the province of Hyderabad, India, where the nation's first (and world's third) LEED-Platinum rated building houses the CII-Sohrabji Godrej Green Business Centre in Madhapur. This is another center predicated upon the increasing demand for workplaces that provide health environments and energy security for cutting edge companies. The Green Business Centre is designed primarily as a conference/visitor center, with a large display area, conference facilities and an extensive marketing program. They offer display space on an 11 month term for businesses and claim to have had over 5,000 visitors in their first year. In this case, the building is built to be a showcase complementary to the displays and exhibits within in order to provide a fully educational and value-added experience for visitors and interested parties.

In England, a local paper proclaims, "Crewe Business Park in Cheshire is an instructive case of a property venture which is not only economically sound and environmentally friendly but economically sound *because* it is environmentally friendly."⁸ This development takes the longer view as well and holds the ground, with 125 year leases and annual ground rentals geared toward the developed value or a capital premium and nominal annual rentals. Even though the surrounding area is urban in nature, the low lot coverage ratio (25%) creates a semi-rural setting that allows for direct access to the natural environment along with all the modern amenities of a modern business park.

⁸ David Griffith for *Estates Gazette - Focus on Business Parks*, there was in addition an article in 'The Times' calling it 'Britain's first genuine eco-business park'.

A Green Technology Park in the Transit Village Area

Locating some sort of a green technology park within the Transit Village Area, specifically in the old Pearl or Pearl Parkway areas, has a number of distinct advantages:

- The Energy Center of the Rockies could act as an anchor tenant that will draw customers and private sector industry representatives to the area, provide a common conference space, and act as a model and test for effective green building and design strategies
- The zoning of either mixed-use industrial 1 or mixed-use industrial 2 would provide the kind of flexibility of uses and building types that such an area would need to be profitable and activated
- The adjacent land uses of residential, mixed-use residential, office, and industrial would provide both demand and supply markets as the area evolves
- The rich regional transit and strategic position in the geographic center of Boulder would make for high visibility (especially from Foothills Parkway) and accessibility for interested parties throughout the region
- The green nature of the area planning, infrastructure, and city policies would assist with green development and provide impetus for branding the area
- The market conditions as addressed in previous chapters are steadily improving for this type of development to take advantage of; comparables should be appearing within the next few years
- The support for this type of development in Boulder is strong and could easily mobilize behind the concept as it becomes more of a possibility
- The current uses in the area, while not ideal, would not impede this type of development significantly, and do already include some more green oriented businesses
- The timing of the area as Phase II (to likely occur in ten or more years) should keep land values low enough to make such a development more feasible
- Several large parcels in the area are controlled by single entities, potentially allowing for easier parcel assemblage

At the current time, there are a number of disadvantages that would need to be overcome in order for such a concept to take place in the Transit Village Area:

- The land costs are expected to increase as development happens in the area and area already prohibitive for many companies
- The city has not yet directed any funds towards supporting this type of development
- Current sidewalks and public realm are not very pedestrian or bicycle friendly
- The area is not yet served by enough transit to make that a viable option
- The nature of the area as Phase II could mean that the surrounding properties could be slow to develop
- There is a distinct lack of comparable developments in the area; the financial and legal infrastructure and experience is missing

- The parcel assembly could be difficult for a large scale user; many different owners in parts

To develop a project of this nature in the Transit Village Area would take a visionary approach and entail a significant amount of risk. To mitigate that risk, the City has tried to keep the zoning flexible enough that if the desired users weren't leasing, a number of other users could come in. There is no requirement for a mixed-use business park area to lease to any particular tenants; rather, if the development is designed from the outset to be a central hub of green technology research amongst other things, the tenants and users could be attracted by the location and situation. If the development practices the green building standards that are likely to be required in Boulder by the time of buildout or the design is opened up to the greater Boulder community, the market buzz will start long before building.

There are many significant reasons to take advantage of this opportunity, and they range from the potential to make a significant return on investment to looking at the greater good for Boulder and the world. The financial advantages of being on pace or just ahead of developments around the area by the time the area redevelops could be lucrative. The green building community is staking their jobs on the emerging trend that green buildings can justify any extra cost both greatly in lifecycle costs and immediately in sales or lease prices. By helping to create a center for people to profit by doing cutting edge research and market introduction of technologies that help the planet, synergies will be realized that affect the Boulder real estate market and raise the attractiveness of Boulder to tenants even more.

Opinions From Local Sustainable Development Experts

“Transforming this property into a green business center is a bold step towards keeping Boulder's green image shining. Using an in-fill site that will be served by the transit center is smart: it will help its tenants maximize their profits as they cut their ecological footprint. It's good for Boulder. It's good for business.”

-Hunter Lovins, President, Natural Capital Solutions

“It's wonderful that the city is taking a hard look at the rapid revolution of green tech and green developments in the context of its master planning efforts. The transit village dialog has generated a number of ideas that are at once progressive and realistic, and I think we all see the tremendous potential to reconfigure the eastern edge of downtown into a vibrant hub. Carrying this vision to fruition will certainly take some diligence, but the broad array of enthusiastic participants in the work to-date is greatly encouraging.”

-Adam Jackaway, Sustainable Design Team Leader, Architectural Energy Corporation

“It's great to see the City of Boulder taking a proactive stance towards green development and looking at ways to take advantage of the alternative energy resources in the area. If the kind of change that is really necessary to occur at this time is going to happen, it often requires thinking ahead of the market, and that kind of prediction is exactly what is happening here. Boulder is truly an epicenter for the green building movement, and this kind of green technology concept has a prime opportunity to take root here.”

-Bryan Bowen, Bryan Bowen Architects

“Redevelopment of the Transit Village area as a clean energy business hub is an incredible opportunity for Boulder to take the lead in this rapidly expanding market. Allowing the Old Pearl Area to redevelop at intensity levels high enough to allow for cost-effective green building would go a long way towards making that happen.”

-Amy Ellsworth, Energy Center of the Rockies Director, Center for Resource Conservation

Additional Resources

The following resources are useful to obtain a working knowledge of clean technology and to get more information on businesses in that sector:

CleanTech: <http://www.Cleantech.com> Website focused on business development and investor relationships, they produce a weekly newsletter with the latest deals and innovations and provide annual reports on the industry.

Vancouver Island Technology Park: <http://www.vitp.ca> This is rapidly emerging as the model to follow for all other green technology parks. Their site has info about their freshly released 2007 master plan which has lessons learned and strategies for other to follow

The Greentech Foundation: <http://www.greentech.org> This foundation based out of India is a non-profit dedicated to advancing the technological solutions green tech has to offer globally.

The National Alliance of Clean Energy Business Incubators: <http://www.cleanenergyalliance.com/> A National Renewable Energy Lab (NREL) initiated consortium of business incubators for clean energy, this site is a great resource for funding information and technical reports being produced

Energy [R]evolution, A Blueprint for Solving Global Warming, USA National Energy Scenario : <http://www.energyblueprint.info/65.0.html> A relatively up to date look at what the US can do to really affect global warming, including the incentivizing of Clean Energy put out by European Renewable Energy Council in Jan 2007

Boulder Renewable Energy & Energy Efficiency (BREEE) working group: <http://www.boulderenergy.org/> The premier resource for local renewable energy information and contacts.

Center for Resource Conservation (Energy Center of the Rockies): http://www.conservationcenter.org/e_ecr.htm The Energy center of the Rockies is one of the driving forces behind this report and could act as the pioneering anchor for a Boulder Green Technology Park. The CRC also has a number of great resource for companies and individuals looking to green their practices.

Austin Clean Technologies Incubator: <http://www.cleanenergyincubator.org> This incubator has been along for a while and is a good source for finding out about the Green tech park(s) in Austin, one of the premier markets for Green tech.

Boulder Innovation Center: <http://www.boulderinnovationcenter.com/> A useful resource for renewable energy based businesses in Boulder, they have recently formed a division specifically to encourage the growth of renewable energy

US Green Building Council: www.usgbc.org this site is a clearinghouse of information on green building resources and information

Colorado Chapter of the USGBC: www.usgbccolorado.org this site has a wealth of local information and access to local service providers

Boulder Green Building Guild: www.bgbg.org this site has a number of local resources for green building and sustainable industry professionals

Appendix : City Initiated Process and Documentation

MEMORANDUM

TO: City of Boulder Employees interested in the Eco-Park Concept

FROM: Conor Merrigan, Long Range Planning Intern

RE: Concepts, Research and Strategies

Concept Summary

The Transit Village Area Plan effort promotes long term environmental sustainability by encouraging a resource-efficient land-use pattern with pro-active transportation demand management that will encourage transit use, reduce vehicle miles traveled, and reduce energy consumption.

Staff is exploring the possibility of creating a green business/technology park within the area and is working with businesses to:

- a. Recommend energy reducing strategies and technologies throughout the area, e.g. solar street lights
- b. Encourage businesses who work in the area of energy reduction/promotion of new technologies to cluster in the TVA.
- c. Identify a range of incentives available to “green” businesses.

Research Summary

Continuing research into the idea has shown that there are a number of factors that would provide support for a renewable energy based technology park in the area. These include:

- Opportunity to capitalize on market opportunities generated by large number of renewable energy research institutions in the Denver Metro area and the state
- Future growth trends in the renewable energy market
- Boulder’s commitment to climate change mitigation
- High number of potential developable industrial sites within the TVA
- Significant interest in idea from private companies and organizations
- Energy Center of the Rockies has tentative plans to build their net-zero demonstration center in the area, could be a good anchor tenant
- Large parcels and relatively few owners provide significant redevelopment opportunities

Ongoing research is focusing on answering the questions raised at the first meeting, continuing to look at the markets that exist and are likely to exist, and staying abreast of current events that directly relate.

What's Been Done so Far

Initial meeting (October 11th)

Attendees:

Leslie Glustrom, Advocates	Colorado Solar Energy Industries Association, Western Resource
Steve Savage	Owner, Eco-Products
Brian Stern	SolSource
Jason Burch	Fuelcellstore.com
Ray Tuomey	Namaste Solar
Carl Koval	Director of CU Renewable Energy Initiative
Amy Ellsworth	Energy Program Director, Center for Resource Conservation
Adam Jackaway	AEC Sustainable Design Team
Richard Polk	City Council
Bill Roettker	Sierra Club

City Staff:

Louise Grauer, Transit Village Area Plan Project Co-Manager
Conor Merrigan, Long Range Planning Intern
Heidi Joyce, Administrative Specialist

- The meeting notes are attached separately, but some of the general issues that people wanted more information on were methods for encouraging this type of development, whether there are other examples, and what this could look like.

The additional entities that weren't represented at the meeting that have been included on the mailing list and in preliminary discussions include: American Solar Energy Society(ASES), Natural Capitalism Solutions, Rocky Mountain Institute, and additional renewable energy and area business owners.

Ideas for Follow-Up

Follow-Up Meetings

1. Green Building/ Environmental Issues
 - a. Commercial Greenpoints
 - b. How could the Climate Action Plan affect or provide incentives for this type of development?
 - c. What strategies could be used to get businesses to go beyond GreenPoints in the area? (Density Bonuses, etc.)
2. Financial Incentives
 - a. What incentives exist and what might exist down the road?
 - b. Collaborative marketing/ Business Clustering
 - c. Others?

First Environmental Business Park Meeting (October 11th, 2006)

Main Discussion Points

- ASES (American Solar Energy Society) and the ECR (Energy Center of the Rockies) are both looking for the same type of building spaces and a partnership could be beneficial for both parties as well as forming the nucleus of a new renewable energy based education, research and business development park in the area. ASES also has been discussing similar showcase building development ideas with the University of Colorado environmental programs and recycling center and it will be important to explore how we all can work together on these exciting educational building opportunities.
- The major land owners should be involved, particularly on both sides of Pearl Parkway.
- The idea of clustering similar uses is also being explored from a building products and design approach around the new location of Eco-Products at 3640 Walnut, just south of the Transit Village Area.
- The trend towards green development is very apparent in residential applications, and becoming more so in commercial ones. The commercial Green Points currently in development will help green new buildings; it may be necessary to go beyond to encourage specific design features, i.e. green roofs
- Benefits of proximity and other ways in which users would be attracted need to be more fully explored. Competitors may not capture enough benefit from being in a concentrated area but complementary uses could do very well if the site was designed to facilitate interaction between uses for consumers and operators.
- Models exist of collaborative marketing, see Downtown Boulder, Inc, and a cohesive strategy combined with high visibility could help make this a valued destination.
- CU will be increasing its presence in the area when they move much of their research (particularly in engineering and chemistry) to their nearby East campus. Other entities from CU could also be interested including the solar decathlon team and the Leeds school of business.
- There is significant momentum building for increased biofuels research the area could capitalize on, staying with the renewable energy theme.
- Other cities that are competing for green businesses have a combination of a strong anchor tenant, sustainably-built infrastructure, business incentives, and tax breaks. The competition is significant, and if Boulder wants to attract these users creative incentives should be looked at.

Attendees at Green Tech Park Meeting on March 5, 2007

Name	Organization
Brian Bowen	Bryan Bowen Architects
Paulette Middleton	American Solar Energy Society
Tom Dean	CU Deming Center
Carl Lawrence	Hybrids-Plus
Amy Ellsworth	Conservation Resource Center
Adam Jackaway	Architectural Energy Corporation
Brett Holland	Fuelcellstore.com
Louise Grauer	City of Boulder, Long Range Planning
Elizabeth Vasatka	City of Boulder, Office of Environmental Affairs
Conor Merrigan	City of Boulder, Long Range Planning

Summary of Green Tech Park Meeting on March 5, 2007

City presentations were followed by questions, answers and discussion on the following topics: status of the Transit Village Area Plan(TVAP) including phasing and environmental strategies, the city's economic vitality program, green tech park research and green building programs.

- Future and amended current zoning would allow appropriate uses to proceed in the old Pearl and Pearl Parkway areas, and the city is willing to work with developers to accomplish the goals of the plan
- The Business Incentive Program has been successful at attracting new businesses and if it is continued in upcoming years there is potential for tailoring it to the needs of new green tech enterprises
- There is strong regional support for clean tech, and the opportunities and constraints at the Boulder site bode well for the implementation of a cluster
- Incubator space for these industries would be well received; more research needs to be undertaken to determine what makes incubator space successful
- By the time that these projects are built, Boulder will be requiring buildings be built to increasingly greener standards; Boulder county is also working towards more comprehensive green building standards
- "Clean tech" is a standard moniker in the business world that includes both natural foods and sustainable energy and would be appropriate here
- Meeting and public space needs to be included to make this a place that draws visitors in and creates a regional presence
- The characteristics of the spaces need to be looked at in greater detail; how green? flex space? retail presence? relationships to surrounding uses? etc.
- If the design and implementation of such a place is presented as a challenge, perhaps as a net-zero energy development, the professional community could rally behind it

- The Energy Center of the Rockies could be the driving force for green redevelopment if that happens in the next few years
- By including stormwater and parking management in addition to the transit facilities, the area has attractive qualities for development
- Including potential tenant comments and comments from interested parties in a report will give it more weight with property owners and those looking to develop down the road (report forthcoming in the next couple of months)