

**CITY of DAVIS
INNOVATION CENTER
STUDY**

**STUDIO 30
UC Davis Extension**

2012

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INNOVATION CENTER STUDY**

**Prepared by
STUDIO 30
UC Davis Extension**

**for the
City of Davis Innovation Task Force
July 2012**

City of Davis Innovation Park Task Force

Established by the City Council in October 2010, the Innovation Park task force is charged with exploring sites for future business park development to accommodate medium-scale businesses. Two City Council members were appointed to form a Task Force with two representatives each selected by the Planning Commission and the Business and Economic Development Commission (BEDC). The Task Force is charged to with examining the following questions:

- Conducting business outreach and public discussion regarding community benefits and impacts of a peripheral business park;
- Evaluate peripheral opportunity sites, focusing on Mace Ranch/I-80 and the Northwest quadrant as initial site options;
- Identify attributes of world-class next-generation university-related business parks and how they would apply to a future business park in Davis;
- Return to City Council with summary of findings and recommendation on future peripheral business park.

Based on information from the process the Task Force reframed and simplified its objective to:

Prepare recommendation on how, where and whether to pursue construction of a future business/innovation park able to primarily accommodate space needs of growing companies in an innovation plan within or peripheral to existing City boundaries.

Task Force Members

Council: Joe Krovoza Mayor and Rochelle Swanson, Mayor Pro Tem

Planning Commission: Ananya Choudhuri and Lucas Frerichs

BEDC: Jim Smith and Tracy Harris, succeeded by Steve Golemme and George Hague

City Staff

Steve Pinkerton, City Manager

Ken Hiatt, Community Development and Sustainability Department Director

Sarah Worley, Economic Development Coordinator

Studio 30

Instructors

Jeff Loux: Ph.D., UC Davis, Adjunct Faculty, Landscape Architecture; UC Davis Extension Chair, Science Agriculture and Natural Resources

Julia Lave Johnston: UC Davis Extension, Director, Land Use and Natural Resources

Robert Sherry: Professional Instructor

Fall Quarter

Students

Cynthia Felix: Community & Regional Development

Catherine Garoupa White: Ph.D. Student, Geography

Richard Perez: Landscape Architecture & Environmental Design Department

Suzanna Rush: Community & Regional Development

Deborah Schrimmer: Community & Regional Development

Vanessa Alyse Thompson: Landscape Architecture & Environmental Design Department

Joshua Ryan Watkins: Ph.D. Student, Geography

Sahoko Yui: Graduate student: Transportation Technology & Policy Department

Professionals-Studio 30 Fellows

Randy Dawson: MFDB Architects, Inc.

Brian Foster: Cunningham Engineering

Heidi Gen Kuong: Planner

Christopher Grimes: Roseville Joint Union HS District

Jeff Henderson: AECOM

Vance E Jones: Sacramento Valley Section APA Board

Claraine Anne Rizalado: UC Davis Extension Land Use and Natural Resources program

Peter M Saucerman: Dreyfuss and Blackford Architects

David Shpak: City of West Sacramento

Lectures/Consultation

Christopher Cabaldon: Mayor, City of West Sacramento

Ken Hiatt: City of Davis

Renner Johnston: Mogavero Notestine Associates

Tim Youmans: EPS

Sarah Worley: City of Davis

Winter Quarter

Students

Emily F. Chen: Environmental Policies, Analysis, Planning

Brigitte Driller: Transportation

Cynthia Felix: Community & Regional Development

Joseph Marcelo: Community & Regional Development

Gregory McDaniel: Community & Regional Development

Richard Perez: Landscape Architecture & Environmental Design Department

Nick Quaglia: Environmental Policy

Harriet Saawo: Humphrey Fellow

Daniel Sheeter: Environmental Policies, Analysis, Planning

Vanessa Alyse Thompson: Landscape Architecture & Environmental Design Department

Brendan Heisler: Civil Engineer-In-Training

Kyle Shipley: ULTRANS

Laurel Torney: ULTRANS

Claraine Anne Rizalado: UC Davis Extension Land Use and Natural Resources program

Professionals – Studio 30 Fellows

Tim Denham: Wood Rodgers

Jeff Henderson: AECOM

Peter M Saucerman: Dreyfuss and Blackford Architects

David Shpak: City of West Sacramento

Lectures/Consultation

Julia Burrows: Greenwise, Valley Vision

Brian Foster: Cunningham Engineering

Ken Hiatt: City of Davis

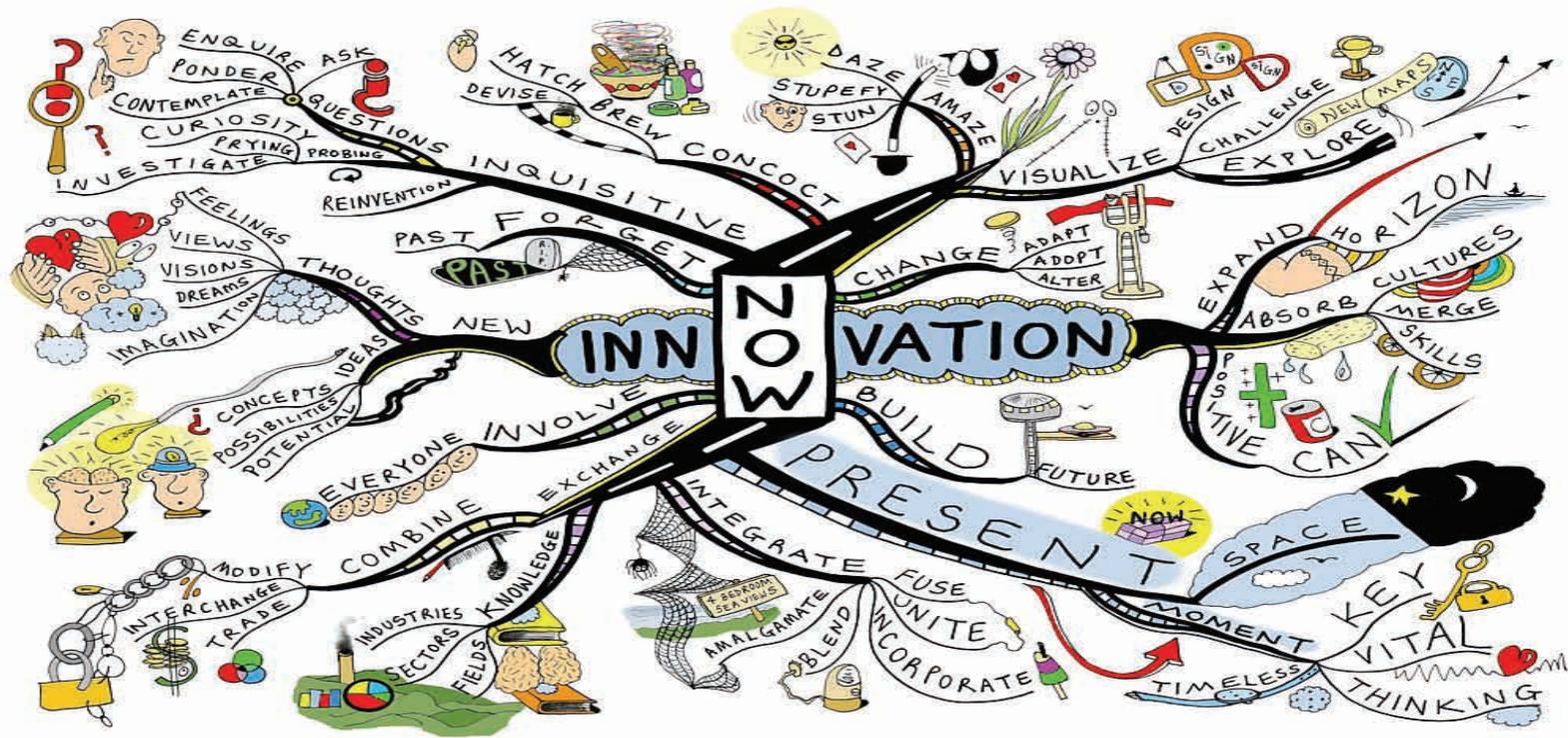
Tim Youmans: EPS

Sarah Worley: City of Davis

This is a UC Davis student project supervised by UC Davis and UC Davis Extension instructors. The report's conclusions are based on the students' research between October 2011- June 2012.

Cover Image provided by Mogavero Notestine Associates

Report Design by Vanessa Alyse Thompson





Executive Summary

Davis is a unique place. Its residents are committed to creating a sustainable community that is innovative, energy efficient, and healthy. It is a small town with all the benefits of a small town (safe, supportive, family oriented), but it also offers the culture and creativity of a much larger city. The City and the University have the intellectual resources to support innovation and the civic commitment to support people. Studio 30 found that most innovation centers tell a compelling story that allows people to identify with the values and the lifestyle of the place. This is as important as the design of the center. The branding and marketing needs to be collaborative effort with both the City and the University engaged in telling the story.

The City of Davis recently formed the Innovation Park Task Force to look at how Davis might plan for and nurture business entrepreneurship and growth of knowledge-oriented businesses and jobs that support and further community values. In previous studies, the City has identified a lack of space for the expansion of local businesses, as well as opportunities to attract larger businesses with jobs that fit the City's University orientation and high skill/education levels. The Task Force was asked by the Davis City Council to look at whether or not the City should pursue an innovation center as a way to retain growing local medium sized businesses; and attract emerging entrepreneurs and businesses to the City.

The Innovation Park Task Force commissioned UC Davis' Studio 30 to provide research on what an innovation center might look like, where it could be located, and how it might benefit the community. Studio 30 is a unique partnership developed by UC Davis Extension that links working professionals in planning, design, policy and related fields with graduate and undergraduate students to complete community projects, plans and studies. Studio 30's research suggests a broad strategy to attract innovative, high tech businesses that support the community's values and benefit its residents. Working with the Task Force, City staff, and Studio 30 professionals and students, four specific sites were analyzed: two larger edge, expansion sites (East and West); and two smaller, close-in incubator/hub sites located near UC Davis and downtown. Though the 5th Street Hub site has the best access to infrastructure and utilities and does not require a Measure R vote or annexation, a major constraint is the lack of interest by one of the main owners to develop their property. The 5th Street Hub is not recommended to be pursued at this time.

Studio 30 also provided research and case studies of innovation centers throughout the United States and internationally to identify best practices, determine common characteristics and examine trends in successful communities. Studio 30 also surveyed cities along the

I-80 corridor and throughout the region to understand regional opportunities, competition and challenges for Davis, and to provide insights into what the optimal role for Davis might be.

This report documents Studio 30's research findings including characteristics of successful innovation centers; specific strategies for the City of Davis; and site analysis, sample site plans and land use options for four potential innovation center sites in Davis. This report is not an exhaustive analysis, nor does it provide full design details about specific sites or the financial benefits and costs of any given project. It does offer a detailed summary of the key components of such a project; a glimpse at successful projects at all scales and types across the country; a detailed comparison of the most likely Davis sites; and a land-based strategy for pursuing an innovation park opportunity.

What are the Characteristics of a Successful Innovation Center?

Based on Studio 30 research, the City of Davis has the amenities and characteristics of other cities that have successfully pursued innovation centers. These key attributes are:

- A strong University partnership;
- An excellent location, close to downtown, housing and recreation;

- Accessibility to various transportation modes and major transportation hubs, well connected at global and local levels;
- Lifestyle amenities including a walkable, viable downtown, excellent public schools, and extensive recreation opportunities;
- Community support for innovative, knowledge-based businesses and activities of various types;
- An emphasis on green/sustainable design;
- opportunities for highly skilled innovators to connect, interact and share ideas; and,
- A strong emphasis on branding and marketing focused on the University research strengths, quality of life, innovative ideas and lifestyles.

What Specific Strategies Make Sense for Davis to Develop an Innovation Center?

Based on the research of successful innovation centers and host cities, Studio 30 identified key innovation center strategies that emphasize the unique strengths of Davis and would benefit the community and support its values:

- **Dispersed Innovation Strategy** Many case studies show that successful innovation centers are part of a larger strategy that provides a variety of opportunities for all types of businesses in various states of growth. A multi-site or dispersed strategy may be the best approach for the City.

- **Scalability** Most innovation centers averaged around 200 acres in size, had a variety of different-sized parcels, and provided ownership opportunities allowing for successful companies to stay in the community as they grow. Many also provided a variety of flexible space size, types, and lease terms and physical and virtual business support services. The City should include an incubator space, as well as larger spaces for expanding companies in its innovation center strategy.

- **University Partnership** Studio 30 found that a strong geographic, institutional, and social/cultural connection with a university or research institution was a key component. The City of Davis should pursue a mutually

beneficial partnership with the University, as well as develop policies that strengthen the connection to the University. This could include transportation infrastructure, work or research spaces that meet the needs of University researchers, and space close to campus.

- **Regional Collaboration Opportunities** The benefits to high-tech businesses in Davis are both local and regional. While Studio 30 found that other communities have more available land and more flexible development policies, Davis has a quality of life not found in other adjacent communities. The high demand for downtown and recreational amenities and University presence make Davis desirable for high-tech entrepreneurs and businesses. The City could serve as an incubator for businesses that could move on to surrounding communities with larger available sites. Davis's excellent central location on the I-80 corridor and multiple transit modes support connections to other innovation centers.

- **Creative Green and "Lifestyle" Design** Many innovation centers strive to be cutting-edge in their design and branding and much of this seems to center around green technologies and sustainability. While actual business products or services may or may not support sustainability, the businesses tend toward emerging technologies and innovation. In marketing to this segment of businesses, highlighting green lifestyles for employees is important. The culture of innovation centers

also places a high value on space for formal and informal social, recreational, and cultural interactions that nurture creativity. Centrally located shared spaces, meeting and conference rooms, cafes, recreation and entertainment venues are an important draw for creative people and innovative businesses and fit well with the community values of Davis.

•**Branding & Marketing: Telling the Davis Story**

Davis residents are committed to creating a sustainable community that is innovative, energy efficient, and healthy. Studio 30 found that most innovation centers tell a compelling story that allows people to identify with the values and the lifestyle of the place. This is as important as the design of the center. The branding and marketing needs to be collaborative effort with both the City and the University engaged in telling the story.

•**Land Use Strategies** Studio 30's research suggests that the City pursue a broad strategy to attract innovative businesses that offers a number of sites that are scalable and range in size so the community can accommodate an incubator, startups and expanding businesses. Some should be directly in contact with the University. This mix of small and large sites allows the city the flexibility to successfully attract, grow and retain innovation businesses. External sites have the potential to support the most jobs because of their size and ability to accommodate a wider variety of both size and type of businesses.

What Community Benefits Would An Innovation Center Offer Davis?

An Innovation Center creates jobs that serve current Davis residents, as well as sustain existing community investments and support community values.

The greatest community benefits of an Innovation Center derive from job creation. An Innovation Center can provide high paying jobs for Davis residents, allow young people to stay in the community, maintain a base population of families with children to support the current infrastructure investments (like parks and schools), and bring additional funding into the City to sustain the high quality of life that the community values.

An Innovation Center in partnership with the University supports the community's commitment to leadership in the areas of sustainability and knowledge-based jobs.

Because of its proximity to the University and the education level of its residents, Davis is in the position of providing infrastructure that will allow for the development of UC Davis's intellectual property and tech transfer programs, as well as community entrepreneurship. By nurturing start-ups and business growth in the community, the City of Davis could support advances in sustainable food, agricultural,

energy, environment, and health and help bring new technologies and products to market. By increasing job opportunities that fit with the skills of its residents Davis may be able to reduce the amount of residents commuting to jobs outside Davis. This would help the community meet its goal of reducing greenhouse gas (GHG) emissions and meet its General Plan and Climate Action Plan goals.

What Type of Land Use Strategy Should the City Pursue?

The current isolated and dispersed sites that are available and appropriately zoned are not adequate in terms of size, location, or configuration (and related constraints) to address the emerging market need of an Innovation Center. With available reasonably priced land and effective marketing to innovative high tech companies, Studio 30 estimates Davis could absorb up to 10 percent or around 100,000 square feet of the 1-1.5 million industrial/office square footage absorbed annually in the Sacramento region. Because of this Studio 30 estimates Davis needs at least 200 acres for business development and expansion over a 20 +/- year time horizon.

A combination of one “close in” hub or incubator with one (or in some future time, two) larger, less constrained (and presumably less costly) edge site offers the right mix of University proximity and identity with the expansion capability to address job growth and rapid business expansion.

The Gateway or Nishi site offers the best opportunity for the close-in/incubator. The site will require University partnership and cooperation. Close proximity to UC Davis, downtown, regional transit and City amenities make this site best for implementing the desired attributes for start-ups, small firms, and University research-oriented businesses. Though not sufficient to meet needs of mid-sized businesses it could serve as a catalyst for establishment of early phase companies and promote downtown business development.

The East and West sites both offer larger scale “move-up” opportunities with excellent acreage, infrastructure, location, and car, bike and transit accessibility. The East site seems preferred at this time because it offers a readily available agricultural mitigation strategy, and may have less neighborhood development concern. However, the West site has recently gone through additional land planning studies, and may also offer successful agricultural mitigation. The West site is slightly favorable in terms of University and downtown/ proximity. Both sites offer interesting opportunities for innovative agricultural related research, urban farming elements, and sustainable/green site and building design opportunities; both sites should be pursued for now.

Development on any of these sites will entail substantial entitlement challenges (such as agricultural mitigation); in particular, a community Measure R vote will present a major challenge for future development.

What are the Recommended Next Steps?

Work closely with the University's economic development staff counterparts to coordinate strategies.

Begin community outreach activities related to the benefits and opportunities for a University-related innovation center in Davis and its role in a multi-faceted economic development strategy for the City. Maintain communication with key community stakeholders such as property owners, developers and advocacy groups.

Form regional partnerships that define the role and recognize the potential contributions of the City in any regional economic development plans and strategies.

Continue to work with the land owner and development team for the Gateway site, as well as the University, to pursue a mixed use project that incorporates a close in, incubator/hub and mixed-use innovation district directly linked to UC Davis.

Continue to work with the land owner and development team for the East site and West site as important large edge "job generators," paying particular attention to innovative design ideas for the site, agricultural mitigation and buffers, the entitlement process (including Measure R requirements) and the potential community costs and benefits.



Table of Contents

1.0 Introduction and Background.....1	4.0 Comparing Davis Sites.....21
1.1 Background	4.1 Small, Close-In Incubator/Hub Sites
1.2 Studio 30: A UC Davis Sustainability Symposium	4.2 Larger Edge Expansion Sites
1.3 Scope of Work	4.3 Site Comparison Summary
1.4 Methodology	
2.0 What is an Innovation Park?.....3	5.0 Summary and Recommendations.....45
2.1 Definition	5.1 Conclusions
2.2 Characteristics of Successful Innovation Centers	5.2 Recommended Next Steps
2.3 Community Benefits of an Innovation Center	
2.4 Davis Specific Benefits	6.0 Appendices.....50
2.5 Regional Context: Trends and Findings	Appendix A: Studio 30 Innovation Park Comparison Matrix
	Appendix B: In-depth Case Studies
3.0 Davis Strategies to Develop an Innovation Center.....15	
3.1 Municipal Strategies: Best Practices	
3.2 Davis Specific Strategies	
3.3 Land Use Strategies	



Project Deliverables

- Innovation Center Case Study Analysis
- Regional Comparison Matrix
- Community Case Studies
- Site Comparison Matrix
- In-depth Community Case Studies
- Site Plans
- Site Development Assumptions
- Development Assumptions Matrix for City's Fiscal Model
- Innovation Center Design Prototypes
- Final comparison of sites and broad alternatives

1.0 Introduction and Background

1.1 Background

The City of Davis is exploring ways to implement its vision of the City as a dynamic center for innovation. Building on existing assets that can attract and maintain intellectual and economic capital, including quality of life and proximity to the University of California, Davis and the Sacramento Region, the City of Davis seeks to create a physical space that would nurture entrepreneurship and attract economic investment. The city's focus is primarily on emerging sustainability related businesses and industry sectors affiliated with UC Davis research strengths including: bio-, green, medical, sustainable food & agriculture, and engineering technologies.

To further explore the idea of creating an Innovation Park, the City of Davis formed an Innovation Park Task Force. The City Council charged the Task Force with preparing recommendations on how, where, and whether to pursue a future business/innovation park to accommodate the space needs of medium-sized companies. The creation of the Task Force was among the actions recommended in the Business Park Land Use Strategy completed and approved

by the City in October of 2010 to develop a multi-step strategy to assure adequate land supply for business growth in the community. The strategy included maximizing use of existing vacant business park land and buildings; pursuing (re)development of Downtown/Nishi/Gateway as a dynamic mixed use innovation district and exploring peripheral sites for future business park development to accommodate medium sized businesses.

1.2 Studio 30: A UC Davis Sustainability Symposium

Studio 30 is an initiative of UC Davis Extension designed to engage a wide range of professional and academic expertise from the community and the university to collaborate with motivated UC Davis graduates and upper division undergraduates to address issues of community sustainability. Supported by UCDE's Land Use and Natural Resources and Sustainability Studies Programs, Studio 30 works with clients to address policy, planning, and design in the built environment. Lectures on relevant topics, facilitated discussions, and hands-on project work foster creative idea sharing between experts, students, and communities.

1.3 Scope of Work

The City of Davis Innovation Task Force asked Studio 30 to define what an innovation center might look like in the City of Davis and to assess the economic, environmental, and social impacts of that innovation center based on different sites. The outcome of this work is documented in two reports. The first, the Progress Report, was delivered at the end of the Studio 30's First Quarter. This Final Report incorporates the previous report and all additional findings made to date.

1.4 Methodology

Studio 30's methodology sought to leverage the expertise of its participants, UC Davis, and planning and design professionals in the region to develop comprehensive processes and insightful outcomes. The goal of the methodology was both to expand the knowledge base and skill levels of Studio 30 participants and to fulfill the scope of work for the Innovation Task Force. To accomplish this Studio 30 used the following methods:

- Literature review of innovation business park concepts and ideas;
- Review of existing Davis market studies and reports;

First Quarter Activities	Completion Date	Product
Conduct interviews with experts, decision-makers and key stakeholders	Ongoing	
Compile, review and analyze existing materials and reports from the City	October 2011	
Review of comparable cities and economic development strategies	November 2011	Comparison Matrix
Review of market analyses	November 2011	
Study of Innovation Center models	December 2011	Comparison Matrix
Presentation to Task Force	December 2011	Slide Show; Case Study Analysis; Regional Survey Matrix
Task Force Workshop	February 2012	Progress Report

Second Quarter Activities	Completion Date	Product
Conduct interviews with experts, decision-makers and key stakeholders	Ongoing	
In-depth Case Studies of Innovation Center models	February 2012	Case Study Sheets
Analyze site alternatives including planning policy, site characteristics, marketability and real estate potential, energy efficiency, mobility issues, and environmental performance.	January-February 2012	Site Comparison Matrix
Build out assumptions for each site	March 2012	Development Assumptions Matrix; Site Plans
Development Prototypes	March 2012	Innovation Center Design Prototypes
Fiscal Analysis using City model & staff for information and data	July 2012	
Present Findings to Task Force	March 2012	Presentation
Report to Task Force	July 2012	Final Report

Table 1-Deliverables and Timeline

- Phone survey of I-80 communities;
- Survey of innovation and research parks throughout the US and internationally;
- Seminars on relevant project skills including: market analysis, fiscal analysis and modeling, regional policy and politics, collaborative regional economic development, sustainable and green architecture, and site design;
- Meetings with the Innovation Park Task Force;
- Interviews with economic development agencies, cities and innovation park representatives on identified case studies;
- Information meetings with land owners and City staff;
- Site design and development assumptions for each site;
- Preliminary fiscal estimates based on land prototypes provided to the City of Davis; and,
- Preliminary analysis of community benefits.

2.0 What Is An Innovation Park?

2.1 Definition

The first question facing Studio 30 was to define a 21st Century Innovation park. The business park concept has been rapidly changing as the market demands new places to do innovative work. Studio 30 did an extensive literature review to understand the characteristics of a contemporary business park. The Association of University Research Parks (AURP), October 2007 report, ***A Study of Characteristics and Trends of Research Parks in North America***, analyzed basic information, revealed trends and determined the economic impact of 134 research parks in the US and Canada. Although Studio 30 focused on Innovation Parks, there are many similarities between the research park concept and an innovation park located in Davis. Studio 30 found ARUP's definition of a university research park clear and comprehensive and adopted it.

It defines a university research park as a property-based venture, which has the following components:

- Master-planned property and buildings designed primarily for private-public R&D facilities, high-technology and science-based companies, and support services;
- A contractual, formal, or operational relationship with one or more science-research institutions;
- A role in promoting the university's R&D through industry partnerships, assisting in the growth of new ventures, and promoting economic development; and,
- A role in aiding the transfer of technology and business skills between university and industry teams.

2.2 Characteristics of Successful Innovation Centers

Studio 30 conducted a broad survey of Innovation/Business Parks across the United States and Western Europe to identify best practices in the categories of physical characteristics, siting, site uses, financing, and design. The goal of this task was to define and analyze the physical characteristics of the Innovation/Business Park concept.

Studio 30 focused on examples that were either comparable to Davis or presented components of the Innovation/Business Park concept that were most relevant to Davis. Several communities with similar attributes to Davis were also selected for a broader look at the interaction between the community and the innovation center. A total of 18 parks were identified and surveyed. A comparison matrix can be found in Appendix A.

Studio 30 used its literature review, including the Association of University Research Parks (AURP) report to make sure that its findings were consistent with other research. Based on this survey and the vision of the Task Force, Studio 30 changed its terminology from Innovation/Business Park to Innovation Center. This more accurately reflects the variety of strategies that the most innovative communities are using to leverage their assets in order to attract economic opportunities for their residents. The following key findings from the Innovation Park Comparison and Case Study Analysis helped define the final sites for analysis.

Innovation Park Survey Comparison

- Boulder, CO
- BRE Innovation Park, Watford, United Kingdom
- Florida Innovation Park, Tallahassee, FL
- Fraunhofer Institute for Solar Energy Systems, Freiberg, Germany
- Innovation Park at Penn State, Centre, PA
- Innovation Village, Pomona, CA
- Innovista, University of South Carolina, Columbia, SC
- Iowa State University Research Park, Coralville, IA
- Madison University Research Park, Madison, WI
- McMaster Innovation Park, Hamilton, Ontario, Canada
- Notre Dame Innovation Park, South Bend, IN
- Portland Green Innovation Park, Portland, OR
- Research Triangle Park (AKA Smartsville, USA) NC
- River Front Research Park, Eugene, OR
- Sacramento Center for Innovation (SCI), Sacramento, CA
- Santa Fe Innovation Park, Santa Fe, NM
- Stanford Research Park, Palo Alto, CA
- UC San Diego Science Research Park, La Jolla, CA

United with the University

- Innovation Centers are usually within three miles of a major university or research facility.
- University proximity is complemented by close political, administrative, or financial relationships with the university. These relationships are characterized as mutually beneficial: the center provides a site for employment, particularly in the realms of research and development, while the university provides a steady stream of qualified staff, collaborators, and consumers. The university can also provide access to campus amenities and resources for innovation center employees. Often the community, innovation centers, and universities work together to apply for research and development funding.

Location, Location, Location!

- Innovation centers have good connectivity with, and proximity to, major transportation hubs like airports and major freeways, and often bus, rail, and bike routes; they are well connected on the global, national, regional and local levels.
- Centers are near housing and a major downtown area. Research suggests that quality of life as it relates to community livability and access to cultural, entertainment and recreational amenities play an important role in a center's success in attracting businesses.
- The City of Boulder and Innovista Park, South Carolina, use a variety of vacant and infill sites through their cities as well as larger parcels of land. A review of these projects showed some similarities to the City of Davis in terms of site opportunities, suggesting that a dispersed strategy could be a model for Davis.

Theme: Anything Innovative

- Innovation centers do not focus on recruiting a particular business or industry but instead try to attract a wide range of businesses whose only similarity maybe that they are innovative or cutting edge. Many centers include incubators for new and emerging companies to nurture cutting edge new technology.

Green/Sustainable Design

- Center design consistently shows an emphasis on “green” practices, generally featuring the latest in trends toward eco-friendly and sustainable design. This is used as a marketing tool and for branding. However, while the physical design of centers is often green, the products or technology being produced by the businesses located at the centers provide a mix of green and conventional technologies.

Connectivity for Creativity

- Centers have shared spaces of varying sizes and types in order to nurture creativity and innovation. Shared spaces that bring together center occupants, such meeting and conference rooms, shared recreation areas or cafes, are key components of the built environment. This is also why proximity to downtowns is valued. Innovation centers and mixed use innovation districts provide amenities and support flexible creative live-work and desired sustainability focused lifestyle choices.

Branding & Marketing

- Centers use marketing and branding to create a distinct identity and market to target clientele. These brands are often based on high tech or sustainable practices, opportunities for creative interaction and collaborations, access to a university, and proximity to high amenity communities that offer a desirable lifestyle.



Characteristics of a Successful Innovation Park:

- United with the University
- Location, Location, Location!
- Theme: Anything Innovative
- Green/Sustainable Design
- Connectivity for Creativity



2.3 Community Benefits of an Innovation Center

Based on Studio 30 research, the following benefits were identified for typical research parks/innovation centers that were collaborative efforts between a university and a community.

University Benefits

- 75 percent of the centers rated as 'high' or 'very high' importance the ability of centers to attract research anchors, such as major national laboratories, major corporate tenants, or centers of excellence.
- Center facilities help to attract research faculty.
- Sponsored research agreements often increase as a result of the interactions of faculty and companies in the center.
- Students obtain employment.
- The university is given opportunities to commercialize its intellectual property.
- Research parks offer a place for faculty and students to work with industry, which was rated by three-quarters of the respondents as a 'high' or 'very high' priority for their center.

- Research parks foster the type of interaction between industry and universities that is critical for translating research knowledge into new technological inventions.
- Research parks can bring these varied professionals to a single location and, through shared laboratory space, meeting room, and break facilities, can provide a forum for efficient communication.

Community Benefits

- The relatively high caliber of firms attracted to the center
- Enhanced growth in the total number of existing and new companies
- The higher salaries of center employees relative to the average wage in the region
- Enhanced employment growth in the community and region
- Positive effect that the center has on the local tax base by providing high paying jobs and attracting other businesses
- Businesses that provide services to center customers and employers generate additional revenue for the community

Business Benefits

Together the University and the City of Davis will have strong market appeal to companies and businesses. Tenants are attracted to innovation centers because of the following:

- Collaboration with university's research facilities, academics, and students
- Shared buildings and resources
- Branding and marketing
- Access to university and amenities and infrastructure associated with both the university and university towns.
- Ability to access research grants and funding

2.4 Davis Specific Benefits

While the above community benefits would accrue to the City of Davis, Studio 30 identified additional specific benefits for the city if it were to pursue an innovation center. These benefits support the community's commitment to sustainability and quality of life.

Reduction in Commuting and Green House Gas Emissions

There has been an increase in the number of Davis residents who leave the city for work in the last five years, according to the US Census Bureau. Not only do more people leave the city for work—an increase from 58 percent in 2002 to 62 percent in 2009— but they are also driving farther. The greatest change is those who drive more than 50 miles, increasing from approximately 13 percent in 2002 to 16 percent in 2009.

This could result in a reduction of community investment both fiscally and emotionally, and volunteer hours could decline as residents spend less time in the city. It also impacts air quality and greenhouse gas emission levels. Increasing job opportunities in town could reduce commutes and improve the environment. Local jobs help maintain the high level of civic involvement for which Davis is known and greatly values. Local businesses who share the values of the community invest in the quality of a community. (Source: U.S. Census Bureau, OnTheMap Application; Beginning of Quarter Employment, 2nd Quarter of 2002-2010.)



Investing in Social Capital and the Next Generation

The other notable demographic trend in Davis is an aging population. Davis has invested heavily in infrastructure that supports families, children and active lifestyles including parks, bike paths, schools and recreation facilities. In order to maintain and enhance this investment, the city needs to create economic opportunities for young people so they can stay in the community, raise families, and pursue business endeavors that increase investments and wages making positive contributions to the local economy. A well designed innovation center would build on the city's commitment to maintaining a sustainable community with a high quality of life for its residents that offers excellent civic space, education and recreational opportunities, and family support systems. In turn, these community values and amenities are key marketing components of successful innovation centers.

By attracting and supporting community-based, green and other “sustainable innovation” businesses that employ Davis residents, the community strengthens and implements its civic and environmental values.

Economic Vitality

To assess community benefits, Studio 30 provided development assumptions for each of the sites to the City of Davis for its fiscal model. These assumptions were also used to develop the site plans for each site. The development assumptions and site plans are discussed later in this report under Section Four: Comparing Davis Sites. The City of Davis's fiscal model was created to look at the short-term economic impacts of development projects. Because the expected build-out for the Innovation Center Strategy is projected to extend over 20 years, the City of Davis has used its fiscal model to take a snapshot of the fiscal impacts of the alternate development scenarios at 50 percent build-out and 100 percent build-out. This information is provided in a separate report.

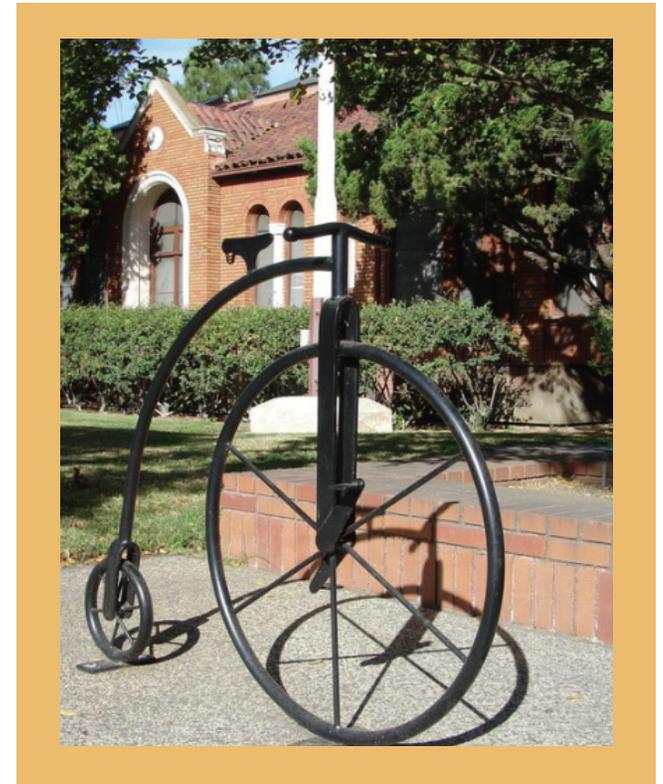
Some of the fiscal benefits to the community could include:

- Property tax from land and buildings in the center
- Transient Occupancy Tax
- Limited Point of Sale (Sales Tax)

- Planning, Building and Construction Fees from new development projects
- Business License Fees
- Municipal Service Tax
- Expenditure of wages from high-paying jobs
- Company Community Support and Investment

Fiscal impacts to the community could include:

- Infrastructure construction, improvements and maintenance
- Municipal service costs such as police, fire, emergency medical, and waste collection and disposal





2.5 Regional Context: Trends and Findings

Studio 30 surveyed 10 cities along the I-80 corridor to understand the regional context in which a City of Davis Innovation Park would be developed and marketed. The research focused on the municipal strategies being pursued within the I-80 region to accommodate or attract a business innovation park. Studio 30 conducted surveys with city planners and economic development agency personnel. The surveys targeted the cities of: Sacramento; West Sacramento; Fairfield; Rohnert Park; Vacaville; Elk Grove; Santa Rosa; Rancho Cordova; Folsom; and Woodland. The results of these surveys are reported in the Regional Context Matrix (Appendix B).

Of the 10 cities surveyed only Sacramento and West Sacramento are directly pursuing a feasibility analysis for the creation of a business innovation park.

Sacramento

Sacramento is in the process of preparing a specific plan for a clean-tech innovation center just south of Sacramento State University and the UC Davis Medical Center. The Specific Plan will include land use regulation, identification of infrastructure needs and an infrastructure and development financing strategy, a project development schedule, and environmental review.

The project has private/public partners collaborating on its development, including Sacramento State University, the Power Inn Alliance, Sacramento Housing and Redevelopment Agency, and Sacramento Municipal Utility District (SMUD), all of whom are in close proximity to the specific plan area. The plan is considering the use of 240 total acres, including 25 acres owned by Sacramento State as a key catalyst site. Potential uses will include industrial and research facilities, offices, an incubator, and a mixed-use village.

Based on its research, the city has determined to focus upon green, clean tech, which is in keeping with the city's Greenwise Regional Action Plan. Greenwise, launched by Mayor Kevin Johnson in 2010, has three key goals:

- Create a self-sustaining clean tech sector;
- The Sacramento Region will become the greenest region in the country; and,
- Brand the Sacramento Region as the Emerald Valley

The schedule for furthering the project includes an environmental review beginning in the spring of 2012, followed by a community outreach program. A public hearings and adoption phase were planned for the spring and summer of 2012.

Comparable Cities in the Region

City	Population, Size of City in square miles	Economic development strategies or policies from General Plan or other adopted plans	Special City Features	Acres available for industrial or business park development	Number of sites available for industrial or business park development	Vacant square footage or number of buildings available to accommodate business park or industrial uses
Fairfield	Population: 103,568; Size: 37.39 square miles	City is applying for grant through Strategic Growth Council for more "green" buildings	Approximately 30 miles from both Sacramento and San Francisco	10 mil sq. ft already developed industrial, some still undeveloped in Sarano Business Park		
West Sacramento	Population: 48,744; Size: 22.846 Square Miles	Considering building a Business Resource and Innovation Center	Close to UCD and Sacramento, near airport	approximately 500	At least 3: Port of West Sac, Southport Business Park, Riverside Commerce Center	approximately 1,500,000
Rohnert Park	Population: 40,97; Size: 11.2772 square miles	Two plans- South East Specific Plan and Mountain Village Development Plan. In 2006 the University District Plan was adopted. Both can be found at: http://www.ci.rohnert-park.ca.us/index.aspx?page=92	Near Sonoma State University	Unkown, but does point to availability in Mountain Village Community that does accommodate such use.	Several within Mountain Village that can accommodate growing businesses	
Vacaville	Population: 92,428; Size: 28.585 square miles	Yes. General plan accommodates for 'green' and 'innovative' recruitment, but not necessarily under the context of a green innovation park.		1400 acres of total light industrial and 700 acres of office or business park, each with different permit uses already assigned	Numerous	over 1,000,000 sq ft.
Elk Grove	Population: 153,015; Size: 42.2 square miles			approx 1,000 acres industrial	236 total parcels	147.609 vacant industrial acres, 48.8 vacant with proposed project
Santa Rosa	Population: 167,815; Size: 41.50 square miles		Near Sacramento State University	59 acres of vacant land designated light industry; 150 acres of vacant land designated general industry; and 75 acres of vacant land designated for business park.		
Rancho Cordova	Population: 64,776; Size: 33.9 square miles	Trying to increase amounts of industrial land, but no focus on "green" or "industrial"		1241 existing industrial; 240 vacant existing industrial acres		
Sacramento	Population: 486,488; Size: 100 square miles	Working on getting Sacramento Center for Innovation approved	Near Capitol; Sac State University, International Airport		only spoke about 1 site (Sac Center for Innovation)	Does not keep an inventory of vacant parcels
Folsom	Population: 72,203; Size: 24 square miles	No particular strategies	Intel is based here	90 acres undeveloped industrial office space; 20.5 acres undeveloped industrial-ENTITLED	7 sites	approximatey 70 acres
Woodland	Population: 55,468; Size: 15 square miles	No particular strategies, city not really focused on this right now	Near UCD	"sites are larger than what Davis has available"... very reluctant to give information		

Table 2-Comparable Cities in the Region.



The City suggests consideration of a number of potential incentives to further the project. These potential incentives are divided into business incentives and development incentives.

Business Incentives

- Enterprise zone tax credit
- Development incentives
- Tax rebates or reductions
- SMUD energy cost saving program

Development Incentives

- Streamline review and approval
- Staff level planning, build and design review
- Reduced fees
- Fee financing program

West Sacramento

West Sacramento has undertaken a feasibility study for the creation of a Business Resource and Innovation Center (BRIC). This study was funded by a Community Block Grant from the California Department of Housing and Community Development (HCD). There is currently no identified location, land-use designation, or proposed acreage associated with the proposed project.

The study will answer these key questions:

- How should the City organize and deliver multiple business assistance providers to better serve local businesses and innovative companies?
- What programs are most important to businesses today that will help companies to expand and grow key industries in the City?
- Would businesses and service providers be willing to use a designated center in the City to receive and provide training, workshops, one-on-one business counseling and networking opportunities?
- Should a center be an actual location or virtual?

The study is currently more focused upon the possible assistance functions such a center could provide, as opposed to it serving as an innovation center. This does not eliminate a further focus upon the innovation side. West

Sacramento has hired a consultant to assist in the feasibility study. The consultant conducted surveys and interviews with local businesses within West Sacramento to try to better understand the needs of the local businesses, again more in line with the center functioning as a resource and assistance center for existing businesses than an innovation center. The final report is on the City of West Sacramento's website.

List of possible center functions:

- Business planning
- Financial and cash flow management
- Marketing, sales, and business development
- Export / Import Development / Training
- Hiring and Training Assistance
- Energy efficiency and energy cost reduction
- Tax Credits and Incentives
- Business Networking
- Access to Capital

Summary of Comparable Cities

When surveyed whether their city had developed any "economic development strategies or policies that incorporated the creation of an innovation business park or green innovation business park" representatives from Vacaville and Rohnert Park did not indicate that they were pursuing such a strategy, but did provide somewhat informative responses.

Vacaville

The representative from Vacaville indicated that the City's General Plan includes provisions for the recruitment of green and innovative businesses, but stressed that the City did not see the creation of an innovation business park as the best means. The representative stressed that the City engages in an ad hoc recruitment strategy that seeks to identify and then lure businesses to the City. This is done in accordance with understandings of the City's comparative advantages and existing strengths.

Rohnert Park

The representative from Rohnert Park indicated that the City is not pursuing a strategy to create a business innovation park, but that the Sonoma Mountain Village Community development did incorporate business park space, designed to accommodate innovative industries into its plan in an effort to attract and house

such businesses. The Village does have a community benefits agreement that requires site wide sustainability standards from the development which include biking and walking infrastructure, zero carbon standards, and the use of sustainable water systems, food, and building materials.

The Regional Picture

While the majority of communities are not pursuing innovation parks per se, they do have considerable acres zoned for industrial/office park uses with a regional total of over 5,240 acres. There is over 3 million square footage of vacant industrial park space total in West Sacramento, Vacaville and Elk Grove. All of these cities are looking for ways to recruit business and with the current focus on high tech and green, it is assumed they will be looking at opportunities in those areas.

The City of Woodland representative's comments revealed the potential for competition in this area. When asked about available sites for business parks the response was "our sites are larger than what Davis has available."

Because of the City's unique characteristics, it could partner with other cities in the region and develop a strong regional context for starting, nurturing and growing high tech, innovative businesses that would benefit the entire region. This is discussed in more detail under **Regional Collaboration Opportunities** in the next section.

3.0 Davis Strategies to Develop an Innovation Center

What would an innovation center look like in Davis?

The research on innovation centers around the United States and Europe helped Studio 30 identify important characteristics of successful innovation centers. Studio 30 then studied other communities that were similar to Davis to see how they had implemented innovation centers. From this, Studio 30 developed not only what organizational and marketing strategies would work best in Davis given its unique attributes, but also an idea of what the land use strategies could be the most beneficial. These are discussed below.

3.1 Municipal Strategies: Best Practices

Studio 30 identified communities similar to Davis in other parts of the United States and California. The communities with the greatest similarity to Davis were researched to see if there were any policies or practices that could be identified as models for a Davis innovation center. The Innovation Task Force selected several communities that they thought would provide valuable information to them in their process.

In-depth case studies were conducted on the following communities:

- City of Boulder Dispersed Business Park Model, Boulder, CO
- i-Gate, City of Livermore/Sandia & Lawrence Livermore Labs, Livermore, CA
- Iowa State University Research Park, Coralville, IA
- Sonoma Mountain Village, Rohnert Park, CA
- University of Illinois, Champaign-Urbana Research & Innovation Park, Champaign-Urbana, IL

Studio 30 conducted phone interviews with staff involved in these projects or knowledgeable about them. The Innovation Task Force identified the following as areas of interest to be considered when conducting the surveys.

- Regional & Local Context
- The Catalyst & Key Partners
- Role of the University
- Tenant Attraction
- Community Benefits

Studio 30 used the results of these surveys to identify the Davis specific strategies which are listed below. Summaries of the individual projects can be found in Appendix B.

3.2 Davis Specific Strategies

Dispersed Innovation Strategy

The City of Boulder has developed a comprehensive plan to support innovative businesses throughout the city that leverages the University of Colorado and the community assets, including high quality of life, brain power, and access to recreation opportunities and proximity to the City of Denver. This model could work well for the City of Davis because it has similar assets to Boulder: a university, high quality of life, access to recreation, a mixture of infill sites as well as opportunities for larger innovation centers that are close to downtown, and proximity to urban areas (both the City of Sacramento and the Bay Area).

Scalability

The majority of innovation centers Studio 30 researched included incubators as well as larger spaces. Incubators provide space for new businesses to start. Often this space is shared with a number of groups and includes shared conference or work space. This space can also be shared with larger companies and allows for creative synergy. Most innovation centers had a variety of different-sized spaces, allowing for successful companies to stay in the community as they grow. The City should include an incubator space, as well as larger spaces for expanding companies in its innovation center strategy.



In-depth Case Studies:

- City of Boulder Dispersed Business Park Model, Boulder, CO
- I-Gate, City of Livermore/Sandia & Lawrence Livermore Labs, Livermore, CA
- Iowa State University Research Park, Coralville, IA
- Sonoma Mountain Village, Rohnert Park, CA
- University of Illinois, Champaign-Urbana Research & Innovation Park,

University Partnership

Studio 30 found that a strong geographic, institutional and social/cultural connection with a university or research institution was a key component in the majority of innovation centers. While a collaborative partnership with the University is the most preferable strategy; a connection with the University should be seen on a continuum. A strong physical connection may balance out a less robust institutional connection. For example, by locating an innovation center near the University, businesses that locate there can take advantage of the brain power attracted to the University. Their owners and employees can still reap the cultural and intellectual benefits of a university community making the innovation center a desirable place to locate a business. Professors may opt for off campus space to launch businesses if the space is convenient. Benefits accrue to businesses that locate in the center and to the community merely through proximity to the University. The City of Davis should pursue a mutually beneficial partnership with the University as well as develop policies that strengthen the connection to the University that are not necessarily dependent on the University's participation. This can include transportation infrastructure, spaces that meet the needs of University researchers, and space close to campus.

Regional Collaboration Opportunities

The benefits to high-tech businesses in Davis are both local and regional. The City of Davis, due to its location and quality of life, is uniquely situated to nurture and grow high-tech businesses. While Studio 30 found that other communities have more available land and more flexible development policies, **Davis has a quality of life not found in other adjacent communities. The high demand for downtown and recreational amenities makes Davis desirable for high-tech entrepreneurs and businesses.** The City of Davis may have a niche because of this ability to attract businesses to this region. The City could serve as an incubator for businesses that could move on to surrounding communities with larger available sites.

The City may want to consider a sub-regional approach that recognizes the strengths of Davis and adjacent communities through some sort of benefit-sharing arrangement. Possible partners include West Sacramento or Woodland. Broader regional collaboration through Valley Vision, the Sacramento Region Innovation Hub or i-Gate in Livermore are also possibilities

Creative Green Design

Studio 30 found that most innovation centers strive to be as cutting-edge and “hip” as possible with respect to various green technologies and sustainability. While actual products or services may not be green, they are innovative. In marketing to this segment of businesses, highlighting green lifestyles for employees is important. This can be accomplished through design and development policies that require green demonstration projects at the center, amenities such as outdoor spaces, bike lockers, bike trails, car charging stations, electric cars, daycare for children and dogs, and LEED buildings and other sustainable design features. **The culture of innovation centers places a high value on space for social, recreational, and cultural interactions. This is seen as an important draw for creative people and innovative businesses.**

Branding & Marketing: Telling the Davis Story

Davis is a unique place. Its residents are committed to creating a sustainable community that is innovative, energy efficient, and healthy. It is a small town with all the benefits of a small town (safe, supportive, family oriented), but it also offers the culture and creativity of a much larger city. The City and the University have the intellectual resources to support innovation

and the civic commitment to support people. Studio 30 found that most innovation centers tell a compelling story that allows people to identify with the values and the lifestyle of the place. This is as important as the design of the center. The branding and marketing needs to be collaborative effort with both the City and the University engaged in telling the story. Branding is important but it must also be backed up by pro-business city officials who market the community aggressively and provide a consistent, positive, responsive and timely development review process

3.3 Land Use Strategies

The innovation centers analyzed by Studio 30 were located near universities or research centers. Employees had access to services and amenities such as restaurants, cafes, civic space and recreational opportunities. Businesses and employees were attracted by the quality of life and the values of a community, including the desire to support new technologies. **Based on Studio 30 research, the City of Davis has the amenities and characteristics of other cities that have successfully pursued innovation centers.**

This leads to further questions, including: What would be in the innovation center? How much land would the innovation center need? Where would an innovation center in Davis be located to ensure marketability based on the criteria identified by Studio 30?

Studio 30 found through its research that innovation centers ranged from 20-200 acres in size. They usually include a physical incubator or hub space that allows for offices or work areas and shared facilities such as conference rooms, computers and other office equipment. The goal of this type of space is to provide greater flexibility in size and duration for leased space and provision of a flexible and virtual array of necessary business services ranging from supporting new start-ups and sole proprietors and larger established businesses to to promote formal and informal cross-pollination of ideas and creativity sharing.

In February 2010, the Center for Strategic Economic Research (CSER) prepared an analysis of economic development and potential employment in the City of Davis for the City of Davis Community Development Department as part of the City's Business Park Land Strategy (BPLS) approved by the City Council in October of 2010 (available online at <http://cityofdavis.org/ed/Business%20Park%20Land%20Strategy/>). The CSER report focused on employment sectors that reflected the values of the community and could offer economic benefit, and improvements in welfare and quality of life for Davis residents. It also focused on employment within the local economy to maximize benefits to the immediate community. The employment growth projected

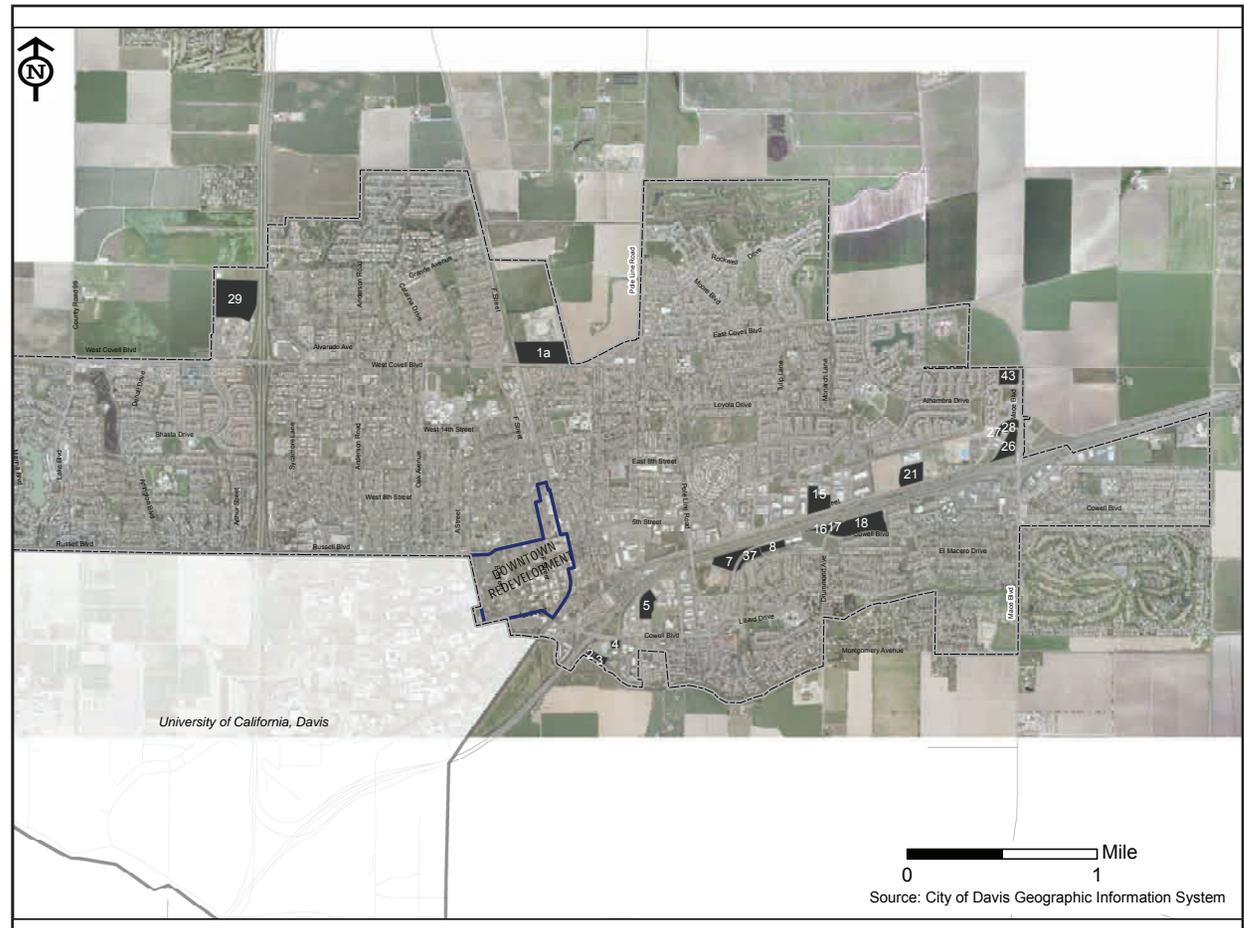
to 2035 under different BPLS study scenarios ranged between an additional 136 and 187 jobs annually in all employment sectors, and a demand for up to 87 to 160 acres of land. CSER estimated that a new business park (100 gross acres/66 net acres) could generate \$445 million dollars of output, \$138 million in employee compensation, \$19 million in state and local tax revenue, and generate 2,600 new jobs. Although the economy has slowed since this study was conducted, Studio 30 found no basis to challenge these figures. Though just a projection, this information shows what could result from a land use strategy to pursue establishment of a new similar sized innovation park in Davis.

In the Sacramento region, industrial land absorption is approximately 1.5 million square feet a year, with an additional 250,000 square feet a year in office space absorption. Davis has a shortage of land available for business expansion. If land were to become available at reasonable costs, Studio 30 believes that Davis could reasonably capture 10 percent of this regional development with aggressive marketing geared towards innovative, high tech businesses-a 100,000 square feet absorption rate per year. Because of this, Studio 30 estimates that Davis needs at least 200 acres of land for

business development and expansion over a 20 +/- year time horizon. (Absorption rate data from CBRE, an international commercial real estate services firm with offices in Sacramento.)

Absorption rates are cyclical and not consistent. The best strategy is to have a number of sites that are scalable and range in size so the community can accommodate an incubator, startups and expanding businesses as well as larger businesses. This mixture of small and large sites allows the city the flexibility to successfully attract, grow and retain innovation businesses.

Studio 30 analyzed the existing sites in Davis for their potential to accommodate high tech businesses. If enough sites could be identified in the city, Studio 30 thought a dispersed site strategy with an internal site serving as a hub might be a good option for the city. After examining the possible sites, Studio 30 concluded that the existing sites had a number of constraints that made this strategy unworkable. The sites are too small, have poor access to infrastructure or transit, were already in the process of being developed, or the owners of the land were not interested in developing or redeveloping their land. The map below shows the sites that are currently vacant.



Vacant Sites

4.0 Comparing Davis Sites

Studio 30's research suggests that different kinds of sites offer different types of innovation center opportunities. Because of this, Studio 30 recommended that the city pursue a broad strategy to attract innovative, high tech businesses that builds on all elements listed previously in this report. Working with the Innovation Park Task Force, city staff, and Studio professionals and students, four sites were selected for assessment two large edge expansion sites: one East and one West, and two smaller, closer-in incubator/hub sites located near Downtown Davis. These sites fit the majority of the characteristics identified for successful innovation centers.

To further meet the general success criteria and success indicators for Davis, Studio 30 looked at several alternative strategies involving these sites. This included pursuing development in downtown when possible along with a more central innovation hub, and a large external site to allow for business expansion and attraction.

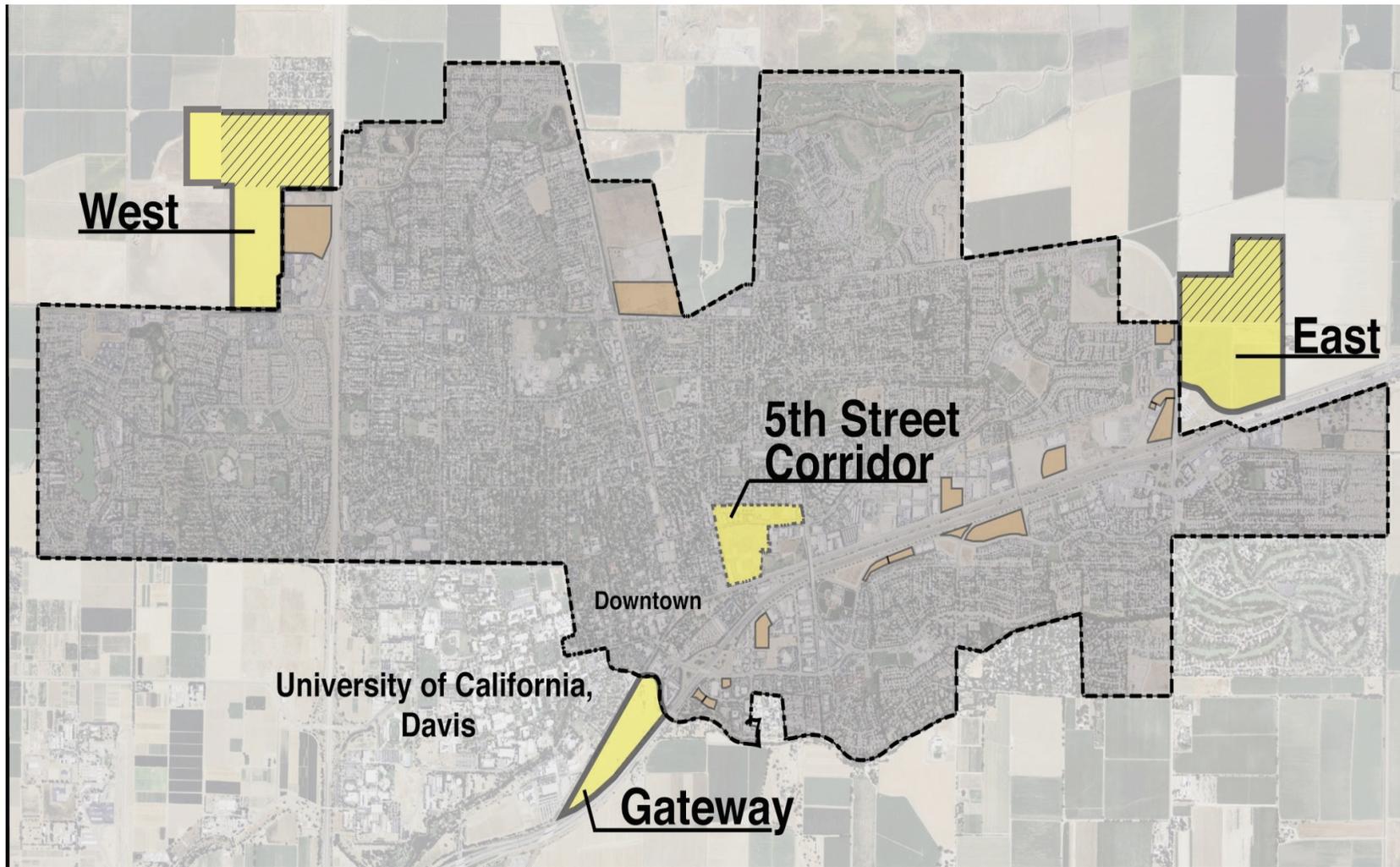
In evaluating the various sites, it makes sense to compare the smaller interior sites (Gateway and 5th Street) to each other and the larger exterior sites (East and West) to each other. The interior sites are much smaller but boast premium access to trains, bus, and bike and pedestrian

infrastructure, and are close to both UC Davis and the Downtown Core. The exterior sites have large acreage of agricultural land, which would provide flexibility for development, but this could also be a challenge because of the community's commitment to preserving agricultural in this region and the need for Measure R votes.

To assess the benefits and challenges of each of these sites, Studio 30 developed a site comparison matrix (pages 23-26) that looked at the following issues for each of the four sites.

- Location and Access
- Environmental & Site Constraints and Opportunities
- Ownership
- Infrastructure

Land use concepts, including land use prototypes and development assumptions were created for each site to help analyze fiscal impacts and community benefits.



Potential Development Sites

LOCATION AND ACCESS	Gateway	5th Street Corridor	West	East
Freeway Access	1 mile from Richards off-ramp 1.3 miles from UC Davis off-ramp	0.8 miles from Richards off-ramp 2.4 miles from Mace off-ramp	0.3 miles to on-ramp	0.3 miles to on-ramp
Freeway Visibility	Visible from I-80	None	Visible from Hwy 113	Visible from Hwy 80
Arterial Visibility	None	Visible from 5th street	Hospital blocks some visibility from West Covell	Visible from Mace Blvd
Distance to Transit Stops (Unitrans Lines)	W, 242 routes adjacent to site 0.5 miles from train station	P/Q, A, and M routes adjacent to the site 0.4 miles from train station	P/Q, 42A&B, 242 routes adjacent to site. 2.5 miles from train station	A, P/Q, 42A&B routes adjacent to site 3.2 miles to train station
Walking Access	No direct access from campus due to railroad tracks. Only access is Olive Drive to Downtown.	Walking distance to downtown core	Internal only	Internal Only
Bicycling Access	Links to campus and city facilities via class 1 path along East boundary	5th street has bike lane and path. Connections to bike facilities beyond site.	Bike facilities on West Covell and Co Rd 990. No existing internal access	Co RD 32A and Mace Blvd have bike lanes but are not pleasant to bike on.
Distance to Shopping Centers	0.9 miles to shopping center (Oakshade)	1.1 miles to shopping center (Oakshade)	0.5 miles to shopping center (Marketplace)	0.6 miles to shopping center (El Macero) 0.5 mile to Target.
Distance to Downtown	.25 miles to Downtown	Adjacent to Downtown	2.4 miles to Downtown Core (3rd & E)	3 miles to Downtown
Distance to UCD (main campus)	Adjacent to campus	0.8 miles to UCD	2.1 miles to UCD (MU)	3.4 miles to UCD
Within City Limits?	No	Yes	No	No
Contiguous to City Limits?	Yes	N/A	Yes	Yes
Within City Sphere of Influence?	In 10-year SOI	Yes	In 20-year SOI	No
Adjacent to other developable property?	Possibly campus	None that is undeveloped.	Unlikely because next to agricultural land.	No: city owned agricultural land.

Table 3.1-Site Comparison Matrix: Location and Access

ENVIRONMENTAL AND SITE CONSTRAINTS, OPPORTUNITIES	Gateway	5th Street Corridor	West	East
Size	44 acres	37 acres	207.8 acres	186 acres
Configuration (Shape)	Carrot shaped/long ellipsoid	PG&E site is square Rectangle along 5th street	T-shaped	Irregular/Rectangular shape.
Drainage	Depression from the former bed of Putah Creek, could serve as natural drainage	Drainage connects to Core Pond, in storm drains to Core Pond.	Existing Covell Drain on South edge of property.	Potential detention pond with existing basin.
Wetlands/Creeks	The former bed of Putah Creek may have restoration potential.	None	None	None
Vegetation	Mature oaks Natural vegetation along creek.	Mostly street trees. Developed land (minimal vegetation)	Field crops Some scattered trees.	Field crops Some scattered trees Scrubby vegetation in the basin.
Contaminants	Possible ESA necessary.	Possible ESA necessary. Adjacent site contaminantion from past spill. All wells on PG&E site are closed and contaminant plume is stable/shrinking.	Possible ESA necessary.	Possible ESA necessary.
Agricultural land	Prime ag land but difficult to farm.	No	Prime agricultural land	Prime agricultural land
Noise	Adjacent to RR/I-80/Highway noise.	Noise from highway and 5th Street	Noise from highway + I-80. Relatively isolated	Adjacent to I-80/Highway noise & Union Pacific RR Tracks
Aesthetics	On-site trees are the best feature. Good views in and out of site.	Minimal vegetation. Industrial	Pleasing views of the coast ranges, agricultural fields.	Pleasant field views.

Table 3.2-Site Comparison Matrix: Environmental and Site Constraints, Opportunities

OWNERSHIP	Gateway	5th Street Corridor	West	East
Site Owner	Gateway LLC.	PG&E, City of Davis, School District	Parlin	Ramos/Oates own Southern Parcel (101.86). Bruner owns Northern Parcel (85).
Owner Interest	Yes	No	Yes	Yes
Owner Characteristics (developer, investor, business owner, etc)	Owner, land developer and investor	All owners actively use site for corp yard uses.	Parlin: land developer and owner	Ramos/Oates: land owner, farmer, developer Guidaro: land developer. Bruner: land owner.
Owner Activity on-site	Vacant, Undeveloped	Active industrial use.	Vacant. Farming-leased.	Vacant. Farming-leased
Ownership of Adjacent Properties	UC Regents	Various	Binning Tract (North).	Agricultural tract (North), 85 acre parcel

Table 3.3-Site Comparison Matrix: Ownership

INFRASTRUCTURE (SHOVEL READINESS)	Gateway	5th Street Corridor	West	East
Street Improvements	Complex, impacted connection with Olive Drive/Richards. Large infrastructure projects to connect under RR tracks to UCD.	No known road connectivity issues. Importance of driveway placements along 5th street.	Potential need for improvements at CA-113 and Covell Road freeway overpass. Covell Rd shoulder improvements. Site partially faces arterial(Covell).	Site partially faces arterial(Mace). No known road connectivity issues.
Water	Nearby access (Olive Dr), capacity unknown. Possible link to UCD.	City of Davis water main in 5th Street.	Access to Davis 14" water main, adjacent to Northwest tank. Access to Risling Ct 12" water main.	Access to Southeast Water tank. Access to Davis 12" water main.
Sewerage	Nearby access (Olive Dr), capacity unknown. Possible link to UCD.	City of Davis sewer main in 5th Street.	Access to Davis 10" sewer main in Risling Ct and 18" main in Covell Rd. Improvements needed to handle new development.	Access to Davis 8" main - insufficient capacity. Various trunk mains available.
Electricity	Nearby access (Olive Dr), capacity unknown. Possible link to UCD.	PG&E. Access, capacity unknown.	PG&E. Nearby Access, capacity unknown.	PG&E. 3-phase 600a 25kV and 12 kV lines in Mace Rd. Capacity improvements possible.
Gas	Nearby access (Olive Dr), capacity unknown.	PG&E. Access, capacity unknown	PG&E. Nearby Access, capacity unknown.	PG&E. Access to 6" gas main in Mace Rd. Capacity improvements possible.
Drainage Facilities	Nearby access (Olive Dr). Putah Creek channel and on-site channel.	City storm drain system, Core Pond available.	Existing open channel onsite. Needs capacity improvements.	Drainage channel + detention basin constructed. Needs capacity improvements.
Flood Protection	Portion of Parcel is Zone A, special flood hazard for 100 year annual flood to Olive Dr and campus.	Southeast portion of parcel is Zone A, special flood hazard for 100 year annual flood.	South parcel + portion of North parcel in Zone A, special flood hazard for 100 year annual flood.	Zone X: outside of 500 year annual flood plain. No development considerations for floods needed.
Broadband	Nearby access.	Nearby access, capacity unknown.	AT&T. Nearby Access, capacity unknown.	Surewest. Existing 4" conduits in Mace Rd.

Table 3.4-Site Comparison Matrix: Infrastructure

Land Use Prototype Matrix

Land use prototypes were developed to evaluate community benefits and fiscal impacts. The Land Use Prototype Matrix identified the below land uses as appropriate for innovation centers. For each land use, the matrix gives a description, development density or Floor Area Ratio (FAR), employment density and examples of what that land use would look like.

Land Use Prototypes

- Office, research lab space
- Innovation hub- centers
- Mixed service businesses
- Recreational opportunities
- Public space
- Transit and transportation
- Hotel/small conference center
- Light industrial

LAND USE PROTOTYPE TABLE

Land Use	Description	Density FAR	Employee Density per SF	Photographic Examples
Office, Research Lab Space	Studio space, wet and dry research labs, incubator space, and offices where a large amount of work can be done	0.3 - 1.0	250	
Innovation Hub-Centers	Research and Development/Flex Space where more innovation occurs	0.3 - 0.5	250	
Mixed Service Business	Cafes/restaurants, day care centers, or copy/shipping services that support the larger businesses in the area	0.3 - 1.0	200	

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		Concept Drawing Example
 <p>The Gap Headquarters in San Bruno</p>	 <p>SACOG Blue Print Plan</p>	
		
		

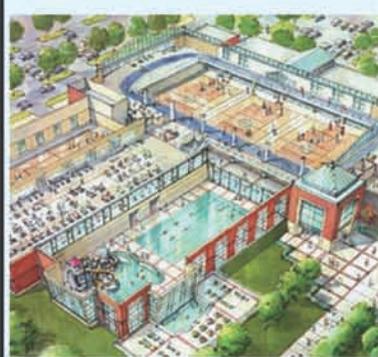
Table 4.1-Land Use Prototype Table

LAND USE PROTOTYPE TABLE

Land Use	Description	Density FAR	Employee Density/SF	Photographic Examples
Recreational Opportunities	Indoor/Outdoor recreation space such as gymnasium, outdoor activity space, walking paths			
Public Space	Plazas, courtyards, bike trails, playgrounds where people can go to interact and relax			
Transit and Transportation	Bike paths/parking, bus stop or drop-off facility for commuters or visitors to get to the site.			

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Concept Drawing Example

 <p>Sonoma State Rec Center</p>	 <p>The UC Davis Arboretum</p>	 <p>Indiana State University Recreational Center.</p>
		
		

4.2-Land Use Prototype Table

Development Assumptions Matrix

To prepare the site plans for each site and to provide information for the City's fiscal analysis, Studio 30 developed reasonable build-out assumptions for each land use based on assumed intensities and available land area (pages 33-34). The matrix includes the following assumptions for each site and its potential land uses:

- Allocated areas per land use
- Density Floor Area Ratio (FAR)
- Total Potential yield
- Building description
- Employees per square foot (SF)
- Potential jobs accommodated by this use

LAND USE PROTOTYPE TABLE

Land Use	Description	Density FAR	Employee Density/SF	Photographic Examples
Hotel/Small Conference Center	A short-term place for visitors to stay for business or vacation.	0.35	400	
Light Industrial	Light Industrial and warehouse space for small scale manufacturing and other lower intensity uses	0.25-0.4	250-400	

STUDIO 30

Concept Drawing Example

	 <p>Hotel Healdsburg, CA</p>	
		

Table 4.3-Land Use Prototype Table

Potential Development Scenarios

5th Street Hub Site

Land Use	Allocated Acres	Density FAR or DU/AC	Potential Yield	Building Type	Employees per SF (Pkg. Ratio)	Potential Jobs
Park/Plaza Space	3.0					
Office/R&D Start-ups	17.0	1.20	888,624 SF	3-4 story urban office	225	3,949
HDR	6.0	35	210 DU	3-4 story apartments		
Restaurant/Café	1.0	0.25	10,890 SF	ground floor	100	109
Support Comm. (Kinkos, FedEx, etc.)	1.0	0.25	10,890 SF	ground floor	100	109
Roads	5.0			(3,650 LF x 61)		
TOTAL	33.0		910,404 SF			4,167

Timing: No interest by Owners. Not likely to happen in the next 10 - 20 years.

Gateway (Nishi) Site

Land Use	Allocated Acres	Density FAR or DU/AC	Potential Yield	Building Type	Employees per SF (Pkg. Ratio)	Potential Jobs
Ag Mitigation/Open Space	12.0			at south tip, balance off-site		
Office/R&D/Labs	17.0	0.60	444,312 SF	2-4 story buildings	275	1,616
HDR	10.0	35	350 DU	3-4 story apartments		
Restaurant/Café	0.5	0.20	4,356 SF	ground floor	100	44
Support Comm (Kinkos, FedEx, etc.)	0.5	0.20	4,356 SF	ground floor	100	44
Roads	4.0			(surface parking or 1 level deck)		
TOTAL	44.0		453,024 SF			1,703

Timing: Very costly site access issues. Could start in 5 years with UCD support. Small number of buildings. 10 year build-out.

Table 5.1-Potential Development Scenarios

West Davis Site

Land Use	Allocated Acres	Density FAR or DU/AC	Potential Yield	Building Type	Employees per SF (Pkg. Ratio)	Potential Jobs
Ag Mitigation	70.0			(pay fee for balance off-site)		
Ag Buffer	15.4			(assume green space)		
Open Space/Park	2.0			(central green space)		
Office/Bio-Health-Ag.	53.0	0.40	923,472 SF	1-3 story office	250	3,694
R&D/Flex Space/Ag-Bio-Health	53.0	0.40	923,472 SF	1-2 story flex bldg.	350	2,638
Lodging	4.0	0.35	60,984 SF	120 rm hotel	400	152
Support Comm.(Kinkos, Drug, etc.)	2.0	0.25	21,780 SF	ground or stand alone	200	109
Restaurant/Café	1.0	0.20	8,712 SF	2 restaurants	200	44
Roads	6.6			(4,700 LF x 61' ROW)		

TOTAL **207.0** **1,938,420 SF** **6,637**

Timing: If Measure R approval is granted, could start in 5 years. 20 year build-out = 96,921 sf/yr

East Davis Site

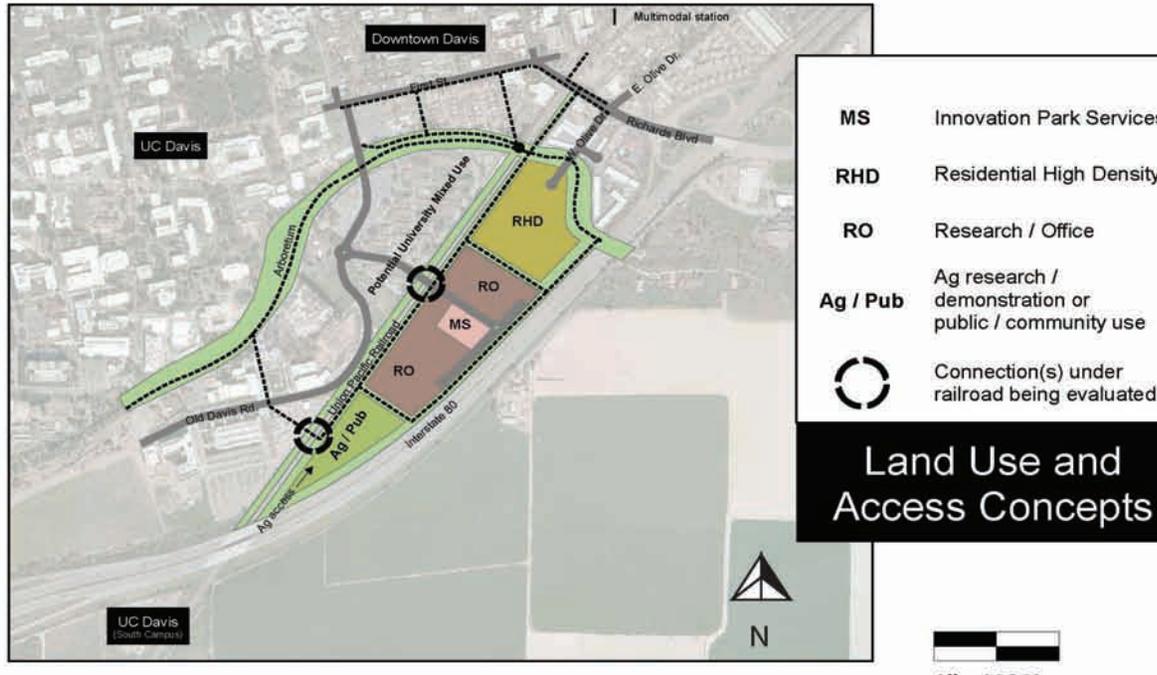
Land Use	Allocated Acres	Density FAR or DU/AC	Potential Yield	Building Type	Employees per SF (Pkg. Ratio)	Potential Jobs
Ag Mitigation				(pay fee for off-site)		
Ag Buffer	21.0			(assume green space)		
Open Space/Det. Basin/Park	14.0			(basin + green space)		
Office/Ag-Food-Tech	65.0	0.40	1,132,560 SF	1-3 story office	250	4,530
R&D/Flex Space/Ag-Food-Tech	65.0	0.40	1,132,560 SF	1-2 story flex bldg.	350	3,236
Lodging	5.0	0.35	76,230 SF	160 rm hotel	400	191
Support Comm. (Kinkos, FedEx, etc.)	2.0	0.25	21,780 SF	ground or stand alone	200	109
Restaurant/Café	2.0	0.20	17,424 SF	4 restaurants	100	174
Roads	11.0			(7,000 LF x 61'+ ROW)		

TOTAL **185.0** **2,380,554 SF** **8,240**

Timing: If Measure R approval is granted, start in 5 years. 25 year build-out = 95,222 sf/yr

Table 5.2-Potential Development Scenarios

4.1 Smaller, Closer-in Incubator/HUB



Gateway

The Gateway Site is an approximately 44 acre parcel of agricultural land that sits between UC Davis and Highway I-80. The site is currently zoned as agriculture. The City has long recognized the potential of this site. The area was included in the City's General Plan as mixed-use during the 1990's; but removed from the General Plan ten years ago in 2001.

Site Assessment

Gateway's greatest asset is its location. The site is adjacent to the UC Davis campus and the internationally known wine and beer education facilities: the Mondavi Institute for Wine and Food Science, and the August A. Busch III Brewing and Food Science Laboratory and Teaching and Research Winery. It is also close to transit hubs, a hotel and conference center, and is within walking distance to downtown Davis. This walkable and bike-friendly environment lends itself to a dense, mixed-use, multi-modal development that would be consistent with the City of Davis's climate action goals.

Neighborhood issues are most likely not be a major concern since the site is not located near many existing residential areas. The site also has great freeway visibility and exposure, attractive natural amenities, and opportunities to be incorporated into an expanded

Gateway

Land Use	Allocated Acres	Density FAR or DU/AC	Potential Yield	Building Type	Employees per SF (Pkg. Ratio)	Potential Jobs
Ag Mitigation/Open Space	12.0			at south tip, balance off-site		
Office/R&D/Labs	17.0	0.60	444,312 SF	2-4 story buildings	275	1,616
HDR	10.0	35	350 DU	3-4 story apartments		
Restaurant/Café	0.5	0.20	4,356 SF	ground floor	200	22
Support Comm (Kinkos, FedEx, etc.)	0.5	0.20	4,356 SF	ground floor	400	11
Roads	4.0			(surface parking or 1 level deck)		
TOTAL	44.0		448,668 SF			1,648

redevelopment plan that includes nearby properties in effect improving the gateway into the City of Davis.

Because of the sites proximity to the University and to hotels, the site has strong potential for an incubator along with small businesses, housing and some retail. By itself it does not have the acreage to meet the city's need for growing or attracting mid-sized businesses, but it could serve as a catalyst for the incubation and establishment of early phase companies. The site could serve as a hub for businesses that are dispersed throughout the city or are located in more external sites by locating the shared meeting rooms or other facilities there. This would allow for stronger linkages with the University and for idea sharing.

There are major constraints with Gateway, however, that cannot be overlooked. The site is relatively small with 44 acres of which 29 are developable after agricultural land mitigation requirements are met. There is limited infrastructure readiness at the site, although there are utilities adjacent to the site. The shape of the site is somewhat awkward and "carrot-like." It is bordered by both train tracks and a highway, creating major access constraints. Significant infrastructure improvements would be needed, including a possible grade separated connection to the University across the train tracks. If the City were to develop the site, it would need a community Measure R Vote.



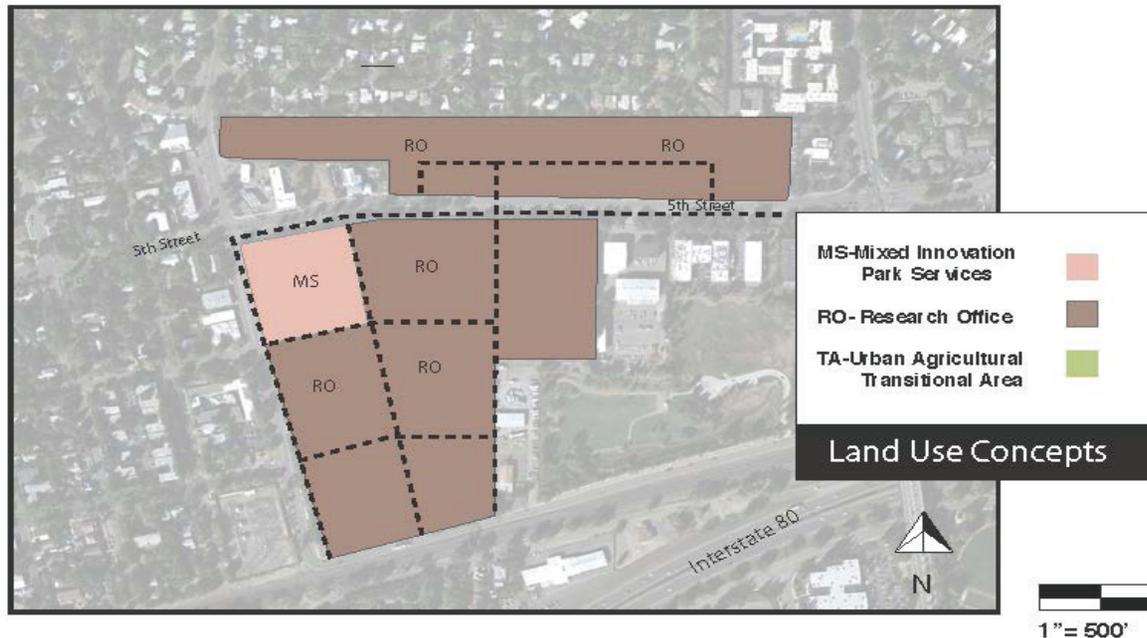
Measure R approved in 2010 is a City of Davis Ordinance requiring voter approval of: any General Plan Land Use Map Amendment that changes a land use designation from an agricultural or urban reserve designation to an urban designation; and for any proposal for development on the last large properties designated for urban use. Measure R extended the effective period of a previous similarly structured Measure J approved in 2000, for another ten years to 2020).

5th Street Corridor

The 5th Street Corridor is located in Downtown Davis, and is made up of multiple sites with different owners, including private owners like PG&E (zoned Industrial) and the City of Davis, District and School Corporation Yard parcels (zoned Commercial Service). In total, the multiple parcels add up to approximately 33 acres of potential infill development. The area is currently mixed-use: commercial, and light industrial.

Site Assessment

The 5th Street Corridor has many positive attributes for a City of Davis innovation hub. It is the only site of the four that does not require annexation or a Measure R vote and the sites are already zoned for industrial uses or commercial service. It fits the criteria for location: in downtown and less than a mile from the University. Because the site is already developed, utilities are largely available. Existing transit infrastructure is also very good. The area is highly walkable and bike-able, and it is close to the train station. As an infill site, it has good access to transit and its location supports biking and walking instead of driving. Because of this, this site may have the highest potential to be carbon neutral, which supports the city's climate action plan goals.



Carbon neutral development works to reduce the amount of green house gases it produces through daily operations such as energy and water usage, as well as the carbon that is generate by how people access the site with cars, transit, walking or biking. The carbon that is produced can be mitigated through generating renewable energy or other sustainable technologies on the site.

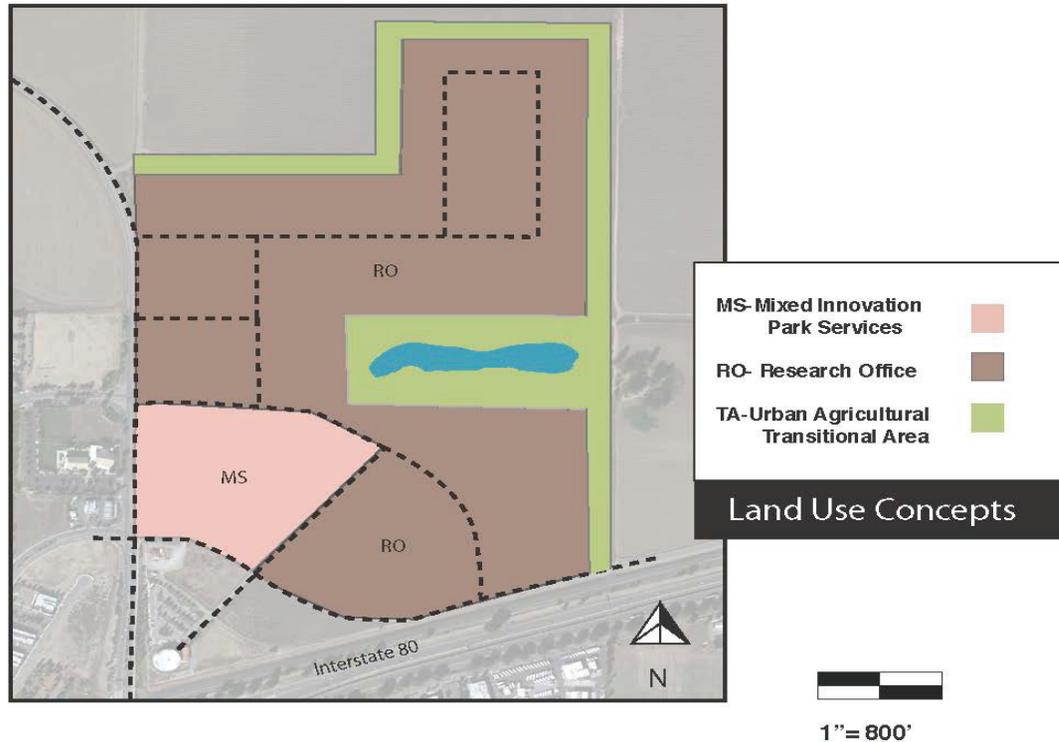
The biggest challenge with 5th Street is that the property owners have not shown an interest in developing their sites. The City has identified its site as a potential future infill residential parcel, pending evaluation of relocation opportunities. Even with owner interest, the nature of the multiple parcels would likely prove problematic. Similar to Gateway, the site is small and the potential to expand is slim. The 5th Street Corridor is also the only site that does not have good highway visibility or access. Like Gateway, 5th Street as an internal innovation hub would need to be part of a larger innovation strategy to meet the economic development needs of the city.



5th Street

Land Use	Allocated Acres	Density FAR or DU/AC	Potential Yield	Building Type	Employees per SF (Pkg. Ratio)	Potential Jobs
Park/Plaza Space	3.0					
Office/R&D Start-ups	17.0	1.20	888,624 SF	3-4 story urban office	225	3,949
HDR	6.0	35	210 DU	3-4 story apartments		
Restaurant/Café	1.0	0.25	10,890 SF	ground floor	200	54
Support Comm. (Kinkos, FedEx, etc.)	1.0	0.25	10,890 SF	ground floor	200	54
Roads	5.0			(3,650 LF x 61)		
TOTAL	33.0		899,514 SF			4,058

4.2 Larger, Edge Expansion Sites



East Site

The East site, also known as Mace I-80, consists of 185 acres of agricultural land near the intersection of Mace Boulevard and County Road 32. The space is significantly larger than both Gateway and 5th Street. There are two owners of the site, both of whom are highly motivated and have been in communication with the City about developing the site.

Site Assessment

The size of the East site is a benefit. It has ample land for medium-scale businesses and to support space-intensive sustainable projects such as rainwater harvesting and solar panels. This could increase its ability to be a research site for certain types of green tech and sustainable agriculture. The site is very accessible from West Sacramento and Sacramento, which could encourage collaboration with those jurisdictions. The site is adjacent to a carpool/park-and-ride lot, which could foster eco-friendly commute

East Davis Site

Land Use	Allocated Acres	Density FAR or DU/AC	Potential Yield	Building Type	Employees per SF (Pkg. Ratio)	Potential Jobs
Ag Mitigation				(pay fee for off-site)		
Ag Buffer	21.0			(assume green space)		
Open Space/Det. Basin/Park	14.0			(basin + green space)		
Office/Ag-Food-Tech	65.0	0.40	1,132,560 SF	1-3 story office	250	4,530
R&D/Flex Space/Ag-Food-Tech	65.0	0.40	1,132,560 SF	1-2 story flex bldg.	350	3,236
Lodging	5.0	0.35	76,230 SF	160 rm hotel	400	191
Support Comm. (Kinkos, FedEx, etc.)	2.0	0.25	21,780 SF	ground or stand alone	200	109
Restaurant/Café	2.0	0.20	17,424 SF	4 restaurants	100	174
Roads	11.0			(7,000 LF x 61'+ ROW)		
TOTAL	185.0		2,380,554 SF			8,240

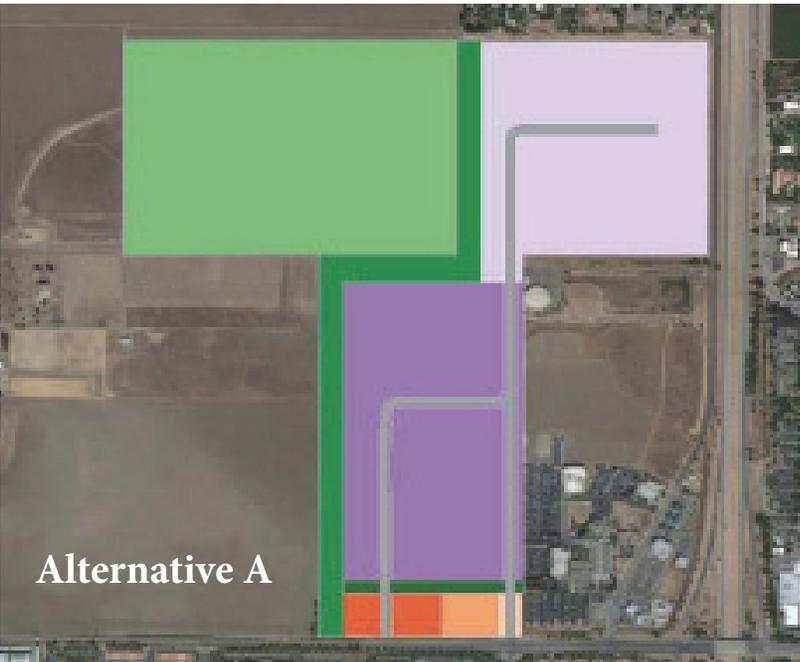
Timing: If Measure R approval is granted, start in 5 years. 25 year build-out =

95,222 sf/yr

behavior. It has good freeway visibility and access. While the East site does not have the bike, pedestrian and train access of the two interior sites, it does have the distinct advantage of good access to the bike path network, which could serve as a link between this site and a Gateway Innovation HUB. Development of the site would require agricultural mitigation. The City of Davis has an ordinance (40A.03.025) requiring a minimum of two acres of protected agricultural land a minimum of one quarter acre in width be provided adjacent to the non-urbanized parcel perimeter as mitigation for each acre converted from agricultural land to nonagricultural land. Alternative mitigation proposals can be considered. Because the City has already established an agricultural buffer bordering the site there are opportunities for alternative mitigation strategies other than onsite or on contiguous properties. The buffer also reduces the concern that developing this site would lead to more East edge development. This could increase the developable acreage of the site. This also reduces the potential for conflict between neighbors and uses on the site. The motivation and willingness of the owners to move forward in developing the land is also beneficial.

The site has a few disadvantages. The site is over three miles from both the University and downtown and not well integrated with the existing city fabric. The property would have to be annexed and rezoned, requiring a Measure R vote. This could be contentious due to the loss of agricultural land and community concerns over growth.





West Site

The West site, also known as Parlin, consists of 207 acres of agricultural land, with 132 acres entitled for six 20 acre and one 12.75 acre residential lots. It is several miles from both Downtown and UCD, although slightly closer than the East site. It is located adjacent to the Davis Sutter Hospital and bordered by West Covell Boulevard. The two-to-one agricultural land mitigation requirement also applies to the West site. The mitigation must either be done on-site or be contiguous to the property. During Studio 30, the West site was in the process of assessing its options for agricultural land mitigation. Because of this, Studio 30 developed two site plans and development scenarios for the West site: one with all the mitigation on-site and one with half the mitigation on-site. The property

West Davis Site - Alternative A (140 acres On-site Ag. Mitigation)

Land Use	Allocated Acres	Density FAR or DU/AC	Potential Yield	Building Type	Employees per SF (Pkg. Ratio)	Potential Jobs
Ag Mitigation	140.0			(pay fee for balance off-site)		
Ag Buffer	11.4			(assume open space)		
Open Space/Park	2.0			(central green space)		
Office/Ag-Bio-Health	21.0	0.40	365,904 SF	1-3 story office	250	1,464
R&D/Flex Space/Ag-Bio-Health	21.0	0.40	365,904 SF	1-2 story flex bldg.	350	1,045
Lodging	4.0	0.35	60,984 SF	120 rm hotel	800	76
Support Comm.(Kinkos, Drug, etc.)	1.0	0.25	10,890 SF	ground or stand alone	500	22
Restaurant/Café	1.0	0.20	8,712 SF	2 restaurants	200	44
Roads	5.6			(4,700 LF x 61' ROW)		
TOTAL	207.0		812,394 SF			2,651

owners have recently submitted a plan to the City that reflects the partial onsite mitigation with the remainder of mitigation on land contiguous to the property. This is similar to West Site Alternative B.

Site Assessment

Like the East site, the West site also has the advantage of size. It has ample land for medium-scale businesses and to support green innovation and urban research farm concepts. There is potential for partnerships with Sutter Hospital and the nearby medical office complex. The West site could build off of the Energy “U Hub” at West Village, which is accessible by Highway 113. Compared to the East site, the West site probably has more existing conveniences. It is walking distance to Safeway, restaurants, banks, and coffee. The owners have shown considerable interest in developing.

There are also some barriers to development. Similar to the East site, the West site is farther from Downtown and UCD than the closer-in incubator/hub sites. There is the potential that a development on this site would bear substantial costs for Covell Road and Highway 113 Interchange improvements. The site will also require a Measure R vote. The agricultural mitigation requirement may be challenging if adjacent land owners do not want to sell their land. If that is the case, the land would





Alternative B



likely need to be mitigated internally at a two to one ratio, which would significantly reduce the amount of developable acres. If the landowner's negotiations with the surrounding owners are successful and the mitigation can be done off-site as they are proposing, the feasibility of the site for an innovation center improves. Of the four sites, the West site may have the greatest potential for neighborhood concerns due to its close proximity to residential developments.

West Davis Site - Alternative B (70 acres On-site Ag. Mitigation)

Land Use	Allocated Acres	Density FAR or DU/AC	Potential Yield	Building Type	Employees per SF (Pkg. Ratio)	Potential Jobs
Ag Mitigation	70.0			(pay fee for balance off-site)		
Ag Buffer	15.4			(assume open space)		
Open Space/Park	2.0			(central green space)		
Office/Bio-Health-Ag.	53.0	0.40	923,472 SF	1-3 story office	250	3,694
R&D/Flex Space/Ag-Bio-Health	53.0	0.40	923,472 SF	1-2 story flex bldg.	350	2,638
Lodging	4.0	0.35	60,984 SF	120 rm hotel	800	76
Support Comm.(Kinkos, Drug, etc.)	2.0	0.25	21,780 SF	ground or stand alone	500	44
Restaurant/Café	1.0	0.20	8,712 SF	2 restaurants	200	44
Roads	6.6			(4,700 LF x 61' ROW)		
TOTAL	207.0		1,938,420 SF			6,496

4.3 Key Site Comparison Findings

The four sites all have distinguishing features that are worth noting. **Gateway** should have the greatest advantage in passing a Measure R vote since it adjoins urbanized land, is bordered by a freeway and rail line, and has a history of being planned for urban uses. There are also already plans for the University and the city to collaborate on its development, which would strengthen the projects potential to be a successful innovation catalyst. That said, Gateway is probably the most challenging site to develop, given its infrastructure demands and constrained connectivity to the roadway network.

The 5th Street Hub is not recommended to be pursued at this time. Though the 5th Street Hub has the best access to infrastructure and utilities and does not require a Measure R vote or annexation, a major constraint is the lack of interest by one of the main owners to redevelop their property. High tech infrastructure on the PG & E site also could pose a problem for development. 5th Street is the only site that lacks good highway visibility.

The West site would be an ideal candidate to foster partnerships with either Sutter Hospital or the Energy Innovation Hub in West Village. We believe the West site has the largest potential for neighborhood concerns. While both the East and West sites will need to do agricultural mitigation, the West site may have more challenges. The site is surrounded by land owners who may not want to sell and, if this is the case, two-thirds of the available land will need to be set aside for internal mitigation. The owners of West site are in negotiations with its neighbors in order to address this issue and it may prove that this is not a constraint in the future.

The developers of **the East site** will be able to take advantage of the existing agricultural border around their land, which provides opportunities for alternative mitigation strategies other than onsite or on contiguous properties. It may be important to consider location within the region. The East site is more accessible to West Sacramento and Sacramento, while the West site is more accessible to the City of Woodland.





Based on our research, Studio 30's analysis suggests that the external sites have the potential to support the most jobs because of their size and ability to accommodate a wider variety of businesses. However, this does not rule out the importance of an internal site. Another major community benefit that Studio 30 identified as an outcome of an innovation center strategy was the potential to create revenue in the Downtown Core. Both of the internal sites could promote downtown business development. Regardless of location, employees would spend money in Davis, which will have a positive impact on Davis businesses. This emphasizes the need to connect an innovation center to downtown, benefitting both downtown and the innovation center, as connectivity is highly valued by employees and business tenants.

Many of Studio 30's case studies show that successful innovation centers are part of a larger strategy that provides a variety of opportunities for all types of businesses in various states of growth. For this reason, a multi-site or dispersed strategy may be the best approach for the city, **Section Five: Summary and Recommendations** will discuss the merits of developing more than one of the four sites.

5.0 Summary and Recommendations

This report is not an exhaustive analysis of the concept of an innovation business park, nor does it provide full design details about specific Davis sites or the financial benefits and costs of any given project. What it does provide is detailed summary of the key components of such a project; a glimpse at successful projects at all scales and types across the country; a detailed comparison of the most likely sites in the Davis sphere; and a land-based strategy for pursuing an innovation park opportunity.

While these may seem self-evident, a few conclusions emerge from the research:

5.1 Community Benefits for Davis

An Innovation Center creates jobs that serve current Davis residents as well as sustain existing community investments and support community values. An Innovation Center could provide high paying jobs for Davis residents, allow young people to stay in the community, maintain a base population of families with children to support the current infrastructure investments that have been made by the city, and bring additional funding into the city to sustain the high quality of life that the community values. According to US Census data from 2000 and 2010, the community of Davis is aging.

This especially noticeable with a drop in population of residents under 10 years of age, and an increase of those between 50-60 years of age.

Davis has heavily invested in community amenities that support a quality of life attractive to families, like the greenbelt networks, bike paths, recreational facilities, parks, and schools. Studio 30 recognizes the value of maintaining Davis as a family friendly town. Retaining and attracting high-tech, innovative companies and higher wage jobs could help retain and attract new young families in Davis and allow young people from Davis to find jobs in the community they grew up in.

An Innovation Center in partnership with the University supports the community's commitment to leadership in the areas of sustainability and innovation.

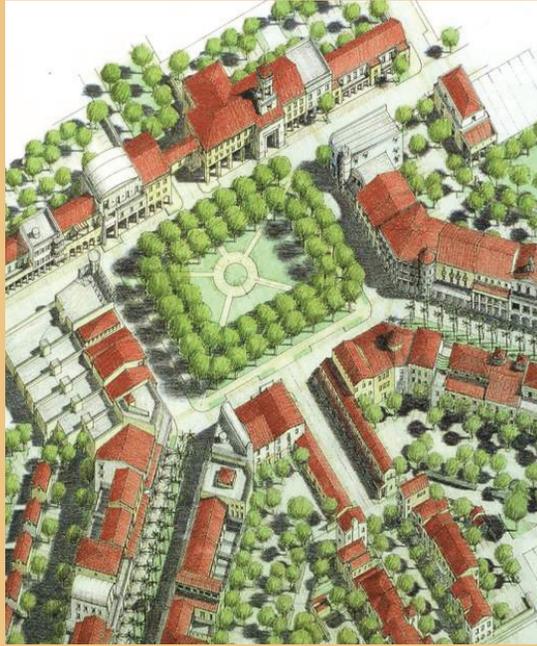
Because of its proximity to the University and the education level of its residents, Davis is in the position of providing infrastructure that will allow for the development of UC Davis's intellectual property and tech transfer programs, as well as community entrepreneurship. By nurturing start-ups and business growth in the community, the City of Davis could support advances in sustainable food, agricultural, energy, and health and help bring new technologies and products to market. This would put Davis in

the center of a local and regional renaissance with far reaching impacts on peoples and economies around the world.

An Innovation Center Land Use Strategy for Davis

Davis is an excellent position to support an Innovation Center. Various regional partnerships are either in place or emerging, and the university is poised to be a major partner in developing this concept.

- The current small, dispersed and constrained sites that are available to support an Innovation Center are not adequate to address the emerging market need to provide for these opportunities.
- A combination of a close in/hub or incubator with a larger, less constrained (and presumably less costly to develop) edge site offers the right mix of University proximity and identity with the expansion capability to address job growth and rapid business expansion, that can often occur with technology and knowledge companies.
- The Gateway or Nishi site offers the best opportunity for a close-in innovation hub, despite its challenging development constraints such as access barriers, narrow



site configuration, and a required Measure R vote. The site will likely need University partnership and cooperation, and lends itself to a mix of uses that integrate university uses including housing, and private research and development space. Close proximity to UC Davis, Downtown and transit make this site best for implementing the desired attributes of a mixed-use innovation district.

- The East site offers a viable option for an edge expansion site because of access, land development envelope, relative ease of agricultural mitigation, available infrastructure with capacity (particularly high speed fiber and drainage systems), a well-developed land development strategy and few surrounding conflicting uses. It also builds off of and extends the existing business park area along Second Street. However, any development of this scale requiring a Measure R vote will present a major challenge to entitle.
- The West site also offers a viable land area, and should continue to be studied and considered for an innovation center. In many ways, it is in a better location than the East site relative to downtown, the University and bike connections, but does not

have as many advantages from the perspective of agricultural mitigation opportunities, drainage infrastructure, and access. The West site may have greater potential neighbor concerns, but that is not known at this time. Like the East site, any development of this scale requiring a Measure R vote will face major hurdles. If the West site can address its mitigation requirements off site, then it provides the same land area (and job growth opportunity) as the East site.

- Both sites offer interesting opportunities for innovative agricultural related research, urban farming elements, and sustainable site, access and building design practices.
- Though the 5th Street Hub site has the best access to infrastructure and utilities and does not require a Measure R vote or annexation, a major constraint is the lack of interest by one of the main owners to develop their property. The 5th Street Hub is not recommended to be pursued at this time.

5.2 Recommended Next Steps

Following review and consideration of this report, the Task Force and City staff should consider the following next steps:

- (1) Work closely with the University's economic development staff counterparts to make sure that their strategies and those of the City are integrated and synergistic as opposed to directly competitive.
- (2) Begin community outreach activities related to the benefits and opportunities for a University-related innovation center in Davis and its role in a multi-faceted economic development strategy for the City. This might include publishing a short, graphic "briefing" brochure based on this report and other studies, working with the local advocacy group on event tabling, community forums and similar efforts, further refining the web site to emphasize current thinking and findings, and related activities to get the word out.
- (3) Continue to work with the land owner and development team for the Gateway site, as well as the University to pursue a mixed-use project that incorporates a "close in" innovation center/incubator and mixed-use innovation district directly linked to UC Davis.

- (4) Continue to work with the land owner and development team for the East site as the most likely larger innovation center expansion site, paying particular attention to innovative design ideas for the site, agricultural buffer, the entitlement process and the potential community costs and benefits.

- (5) Continue to work with the land owner and development team for the West site as a viable alternative option for a larger innovation center, paying close attention to innovative design ideas for the site, agricultural buffer, the entitlement process and potential community costs and benefits.

- (6) Continue to coordinate with and keep key stakeholders, such as property owners, major developers, and regional technology advocacy groups, (UC Davis Innovation Access, Sacramento and i-GATE Innovation Hubs etc.) informed of progress on economic development strategies and opportunities most advantageous for the City to attract university-related businesses.

- (7) Continue to form partnerships with the University Innovation Hubs, the surrounding cities (Woodland, and West Sacramento in particular) and Sacramento Region to maximize the University's position within the region, identify the key role for each entity, and maximize leverage for attracting university-related job growth.



6.0 Appendices

Appendix A: Studio 30 Innovation Park Comparison Matrix

- Boulder, CO
- BRE Innovation Park, Watford, United Kingdom
- Florida Innovation Park, Tallahassee, FL
- Fraunhofer Institute for Solar Energy Systems, Freiberg, Germany
- Innovation Park at Penn State, Centre, PA
- Innovation Village, Pomona, CA
- Innovista, University of South Carolina, Columbia, SC
- Iowa State University Research Park, Coralville, IA
- Madison University Research Park, Madison, WI
- McMaster Innovation Park, Hamilton, Ontario, Canada
- Notre Dame Innovation Park, South Bend, IN
- Portland Green Innovation Park, Portland, OR
- Research Triangle Park (AKA Smartsville, USA) NC
- River Front Research Park, Eugene, OR
- Sacramento Center for Innovation (SCI), Sacramento, CA
- Santa Fe Innovation Park, Santa Fe, NM
- Stanford Research Park, Palo Alto, CA
- UC San Diego Science Research Park, La Jolla, CA

Appendix B: In-depth Case Studies

- City of Boulder Dispersed Business Park Model, Boulder, CO
- I-Gate, City of Livermore/Sandia & Lawrence Livermore Labs, Livermore, CA
- Iowa State University Research Park, Coralville, IA
- Sonoma Mountain Village, Rohnert Park, CA
- University of Illinois, Champaign-Urbana Research & Innovation Park, Champaign-Urbana, IL

Boulder Dispersed Model

SITE NAME	Boulder Dispersed Business Park Model
Acreage	16,256 acres
Total Enclosed Area (GSF)	Na
Number of Buildings	Na
CONTACT INFO	City of Boulder
owner	City of Boulder
address	1777 Broadway, Boulder CO 80302
phone	(303) 441-3388
email	online
website	http://www.bouldercolorado.gov/
LOCATION	Description
city	Boulder
state	Colorado
country	USA
population	97,385
proximity to university	less than 5 miles
prox. to downtown	30 min to Denver
prox. complementary industries	mixed with other businesses downtown
transit service to site	bus system
prox. interstate highway	176, 170, 125
prox. airport w/common carrier	45 min
prox. general aviation airport	na



Financing:
Public-private collaboration between the City of Boulder, Boulder Economic Council, Boulder Chamber and other local groups supports the healthy and sustainable business environment that fosters the creation and growth of businesses in Boulder. A number of programs, including a Business Incentive Program for qualified businesses, are available to help businesses relocate or expand here.
Uses:
With a well-deserved reputation as a scientific hub, Boulder sits in one of the country's most productive advanced technology corridors. Home to a world-class research university, major government research facilities, visionary entrepreneurs, and the nation's most highly educated population, Boulder is the center of innovation for Colorado
Site Design:
Boulder's location in the Mountain Time Zone, midway between Frankfurt and Tokyo, allows for easier access to international markets. In a single business day, real-time connections can be made with six continents using "one-bounce" satellite network uplinks that provide higher quality communications at lower prices. Attracting and retaining top talent is made easier by the award-winning quality of life here. The city is surrounded by scenic beauty and the recreational opportunities afforded by over 45,000 acres of open space and 200 miles of hiking and biking trails. Residents enjoy a comfortable climate, excellent schools, high-quality healthcare, earth-friendly policies and a full range of shopping, dining, cultural and entertainment options.
References:
http://www.bouldercolorado.gov/index.php?option=com_content&view=article&id=13503&Itemid=4513,

BRE Innovation Park

SITE NAME	BRE Innovation Park
Acreage	under 10 acres
Total Enclosed Area (GSF)	na
Number of Buildings	na
CONTACT INFO	BRE Trust
owner	BRE Trust
address	Bucknalls Lane, Watford WD25 9XX
phone	(+44 (0) 1923 664 743)
email	watsonc@bretrust.org.uk
website	http://www.bre.co.uk/
LOCATION	Description
city	Watford
state	na
country	UK
population	79600
proximity to university	less than 30 miles
prox. to downtown	20 miles (London)
prox. complementary industries	na
transit service to site	Train (20 minute walk)
prox. interstate highway	Near 2 main motorways
prox. airport w/common carrier	60 miles
prox. general aviation airport	na



Financing:
over 400 different construction innovations and emerging technologies as well as a state of the art community landscape design. BREEAM holistic building assessment and certification program
Uses:
This park is primarily an exhibition space for sustainable innovations. Site includes 9 sustainable homes, a centralized open space, visitor center, health center, river dam and enterprise hub with education, incentives and support services. Launched in June 2005 by the then Deputy Prime Minister, Rt. Hon. John Prescott, the BRE Innovation Park demonstrates the latest and most innovative developments in sustainable construction. Its primary aim has been to catalyse change within construction and move the industry forward. This has been achieved by embracing recognised <u>best practice and innovating in response to new challenges.</u>
Site Design:
By working in partnership with some of the UK's principal developers, house builders, architects, designers and manufacturers, the park provides an evidence-based body of knowledge about sustainable buildings and <u>communities.</u>
References:
http://www.bre.co.uk/

Florida Innovation Park

SITE NAME	Florida Innovation Park
Acreage	208 acres
Total Enclosed Area (GSF)	Total Enclosed Area (GSF)
Number of Buildings	16 with 18 available lots
CONTACT INFO	LCRDA
owner	Leon County Research and Development Authority
address	1736 West Paul Dirac Drive Tallahassee, Florida 32310
phone	(850) 575-0343
email	LCRDA@inn-park.com
website	http://www.innovation-park.com
LOCATION	Description
city	Tallahassee
state	Florida
country	USA
population	180,000 (2010)
proximity to university	3 miles
prox. to downtown	6 miles
prox. complementary industries	1/2 mile
transit service to site	Yes, StarMetro bus
prox. interstate highway	10 miles
prox. airport w/common carrier	3 miles
prox. general aviation airport	3 miles

Financing:
Appears to be a County owned facility with a \$1.8M annual expense budget, unknown income from rental properties.
Uses:
Innovation Park is located just minutes from the state capital, Florida State University, Florida A&M University, Tallahassee Community College and the Tallahassee Regional Airport. Sixteen buildings, totaling one million square feet, provide the 2,000 employees of Innovation Park with the space to develop the most advanced technology in our area. Fifty organizations call Innovation Park home. The mission of the Leon County Research and Development Authority is to work in affiliation with Florida A&M University and Florida State University to develop the research park to: Promote scientific research and development activities and foster economic development and broaden the economic base of Leon County.
Site Design:
PUD permit required. Leon County Research and Development Authority Development Review Committee approval required. on site but limited trip generation allowed by LCRDA No mention of sustainability. Probably NOT a Green tech park.
References:
http://www.innovation-park.com



Fraunhofer Institute for Solar Energy Systems

SITE NAME	Fraunhofer Institute for Solar Energy Systems
Acreage	60,800 acres
Total Enclosed Area (GSF)	na
Number of Buildings	60 institutions worldwide
CONTACT INFO	Fraunhofer-Gesellschaft
owner	Fraunhofer-Gesellschaft
address	Hansastraße 27c 80686 Munich,Germany
phone	49 89 1205-4700
email	online
website	http://www.ise.fraunhofer.de/about-us/data-and-facts
LOCATION	Description
city	Freiburg
state	na
country	Germany
population	215,966
proximity to university	Fraunhofer Institute
prox. to downtown	15 mins
prox. complementary industries	less than 10 mins
transit service to site	bus or train
prox. interstate highway	less than 5 miles
prox. airport w/common carrier	less than 20 miles
prox. general aviation airport	na



Financing:

Employs around 18,000, mainly scientists and engineers, with an annual research budget of about €1.65 billion Some basic funding for the Fraunhofer Society is provided by the state (the German public, through federal government together with the German Länder, "owns" the Fraunhofer Society), but more than 70% of the funding is earned through contract work, either for government sponsored projects or from industry The so-called "Fraunhofer Model" has been in existence since 1973 and has led to the Society's continuing growth. Under the model, the Fraunhofer Society earns ca. 70% of its income through contracts with industry or specific government projects. The other 30% of the budget is sourced in the proportion 9:1 from federal and state (Land) government grants and is used to support preparatory research.

Uses:

Work in the research and development of solar energy technology. Develops systems, components, materials and processes for: buildings and technical building services, applied optics and functional surfaces, solar cells, off-grid power supplies, grid-connected renewable power generation and hydrogen technology.

Site Design:

na

References:

<http://www.ise.fraunhofer.de/about-us/data-and-facts>

Innovation Park at Penn State

SITE NAME	Innovation Park at Penn State
Acreage	118 acres
Total Enclosed Area (GSF)	na
Number of Buildings	11+
CONTACT INFO	Penn State
owner	Penn State
address	200 Innovation Boulevard, State College, PA 16803
phone	814-865-5925
email	online
website	http://www.innovationpark.psu.edu/
LOCATION	Description
city	Centre
state	Pennsylvania
country	USA
population	38420
proximity to university	AT Penn State
prox. to downtown	137 miles to Pittsburgh
prox. complementary industries	opportunities within business park
transit service to site	bus system
prox. interstate highway	on the corner of 99 & 80
prox. airport w/common carrier	less than 10 miles
prox. general aviation airport	na
Financing:	
	na
Uses:	
	Presently over 50 different tenants, covering an array of fields including: local government, engineering, law, computer technology, financial and engineering. 23000 sq ft housing, 108,000 agriculture, 516,000 open space
Site Design:	
	All facilities in Innovation Park including hotel, child care, office and lab space, restaurants, conference rooms, and exercise facilities.
References:	
	http://www.innovationpark.psu.edu/about/parking/parking-walking-map-pdf



Innovation Village, Pomona

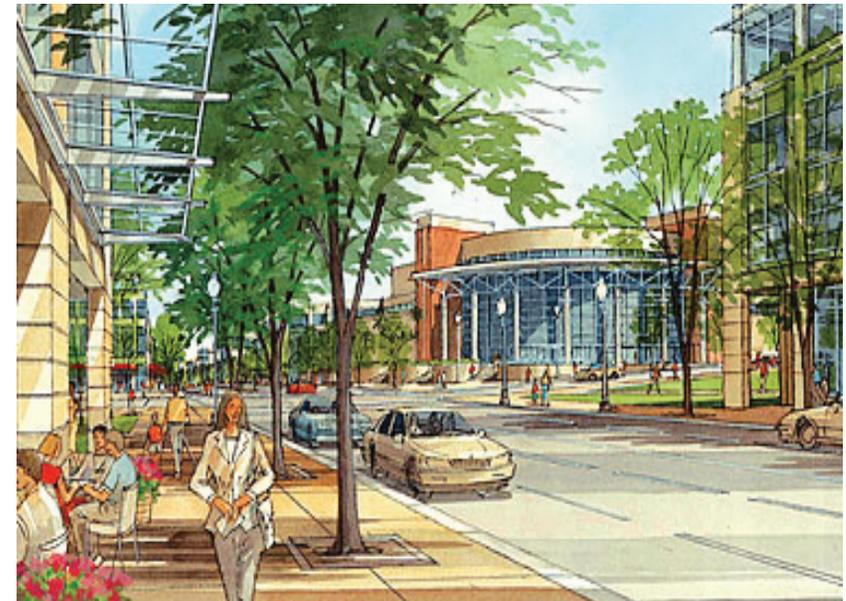
SITE NAME	Innovation Village, Pomona
Acreage	28Ac. Developed/150 total
Total Enclosed Area (GSF)	376,000 GSF
Number of Buildings	5, in final phase
CONTACT INFO	Cal Poly Pomona
owner	Cal Poly Pomona
address	3801 W. Temple Ave
phone	909-869-3154
email	vaughanacton@csupomona.edu
website	http://www.innovationvillage.org/
LOCATION	Description
city	Pomona
state	CA
country	USA
population	163000
proximity to university	on University grounds
prox. to downtown	approx. 5 miles
prox. complementary industries	Org. compliment University academics
transit service to site	campus shuttle
prox. interstate highway	57,10,210,71,60
prox. airport w/common carrier	LAX approx. 35 miles
prox. general aviation airport	Ontario Int. Airport approx. 13miles



Financing:
It was initially proposed by the University President, but eventually became incorporated into the Campus' Master Plan in 2000.
Uses:
Organizations active in areas complimentary to Cal Poly Pomona academic programs in sciences and engineering and research activities in aerospace, agricultural, biomedical and biotechnology, circuitry, communications electronics, energy, nutrition, optics, sensors, space. Has a CC&R (Covenants, Conditions, and Restrictions) that encourage research and development and allow certain uses. Want tenants who are willing to partner with the University.
Site Design:
Employees have access to many of the same benefits afforded to Faculty and staff. They receive an Innovation Village Affiliate card which gives them access to (some subject to a fee): Day care, fitness center, University library and data bases, grant writers through the Office of Research, relocation housing assistance, campus shuttle system, etc. Also have access to Fair Oaks Walk, which is housing for Cal Poly Pomona Faculty and Staff. Zoning allows uses for limited prototype manufacturing, medical devices, pharmaceutical, research and development, corporate headquarters, and other uses that either support the above categories or otherwise meet the needs and mission of the university with following general design guides:
References:
http://www.innovationvillage.org/

Innovista, University of South Carolina

SITE NAME	Innovista University of South Carolina
Acreage	500 acres, 1/4th of city center
Total Enclosed Area (GSF)	na
Number of Buildings	decentralized throughout downtown
CONTACT INFO	Lauren Edwards
owner	Guignard Family 18%, University of South Carolina 25% Other 27% (city, state, 250 small landowners)
address	Downtown Columbia
phone	(803)777-9796
email	Innovista@sc.edu
website	http://innovista.sc.edu/
LOCATION	Description
city	Columbia
state	South Carolina
country	USA
population	129272
proximity to university	less than 1 miles
prox. to downtown	located within downtown
prox. complementary industries	mixed together throughout downtown
transit service to site	bus, walk
prox. interstate highway	near highways 378, 48
prox. airport w/common carrier	approx. 7 miles
prox. general aviation airport	approx. 3 miles



Financing:
Total cost for development around \$27,000,000 plus \$93,000,000 for waterfront enhancements, altogether 120,000,000. Funding comes from the Water Resources Development Act Money, obtained through Army Corp of Engineers through regional sponsor. Also, Tax Increment Financing (TIF) Property tax revenue obtained through bond issuance, backed by increase in property tax. Research University Infrastructure Act and other University revenue streams as well as Federal and Private grants.
Uses:
Decentralized spaces integrated into downtown "live-work-play" environment, united through specific design guidelines and mixed-use urban zoning.
Site Design:
Current uses are Light Industrial Warehouses, small suburban office buildings, some commuter parking lots and a large amount of vacant property. Cohesiveness through District Design guidelines which are highly specific. Zoning changes, from M-1 and M-2 (light and heavy industrial) to MX2 (Mixed-use Urban with a design overlay district).
References:
University of South Carolina Innovista Fact sheet

Iowa State University Research Park

SITE NAME	Iowa State University Research Park
Acreage	230 acres, 50% built
Total Enclosed Area (GSF)	270,000 sq ft
Number of Buildings	162
CONTACT INFO	Jeff Benson
owner	Iowa State University Research Park Corporation
address	2500 Crosspark Rd
phone	(515)239-5400
email	jbenson@city.ames.ia.us
website	http://researchpark.uiowa.edu/index.php
LOCATION	Description
city	Coralville
state	Iowa
country	United States
population	59,000
proximity to university	Next to Iowa University's Science and Technology Institute
prox. to downtown	30 miles from Des Moines
prox. complementary industries	university research
transit service to site	bus
prox. interstate highway	next to major highway
prox. airport w/common carrier	approx. 6 miles
prox. general aviation airport	approx. 10 miles



Financing:
Built in 1993; Proposals for such a facility began in the early 1980's. It has an interesting development strategy based off of covenants. The whole site acts a bit like a research park subdivision, with business owners developing the buildings the firm will use themselves and, in the event that the company moves on or goes bankrupt, the land and buildings reverting to the Research Park Corporation.
Uses:
There are currently 57 tenants. This park acts like a business incubator, primarily. Health, technology, veterinary sciences, employs Graduate students, supports company research. Surrounded by mixed-use zoned district and farmland.: According to Mr. Benson, a constant supply of Grad students from the university providing free labor is the major reason for its location in Ames. Its location next to campus facilitates this by attracting them with valuable internships in real life firms. There is a strong university connection: the group who owns the research park receives monies independent of the university and uses this to help businesses starting up. It will also use their university connections and their partnerships with different federal research programs to try to give guidance to their start-up companies. A bit of a business incubator paradigm.
Site Design:
In the heart of Iowa, 30 miles from Des Moines, and has the Iowa University of Science and Technology, a major public research institution within its borders. The city zoned a special zoning district for it called Planned Industrial. This zone was specially made to fit the uses of the research park district. As the firms they wished to attract and the other uses around (commercial and high density housing) require sites with less noise, they made special prohibitions regarding the size of storage space and yards, and on freight traffic. This is the main factor that differentiates it from other industrial zone types.
References:
http://researchpark.uiowa.edu/index.php

Madison University Research Park

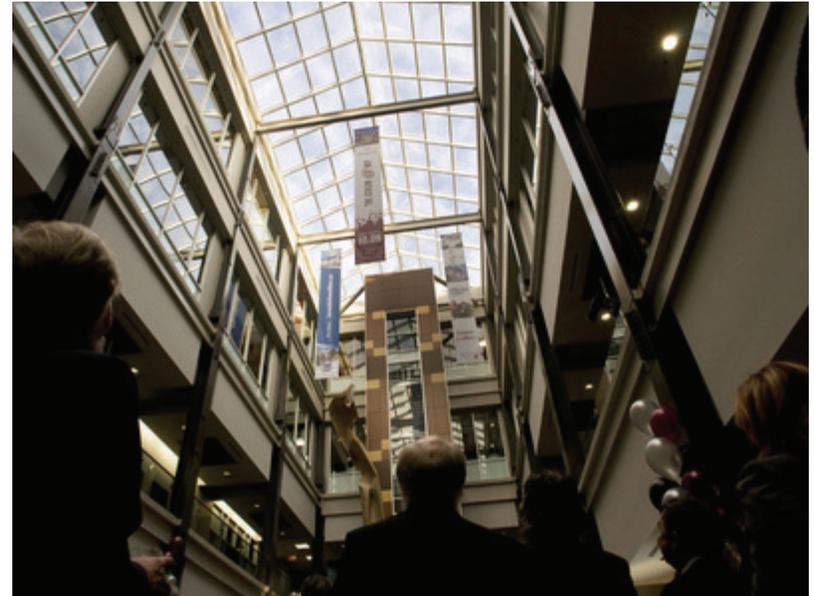
SITE NAME	Madison University Research Park
Acreage	54,208 acres
Total Enclosed Area (GSF)	1.8 mill sq ft
Number of Buildings	37
CONTACT INFO	University of Wisconsin
owner	University of Wisconsin
address	510 Charmany Drive, Suite 250
phone	(608)441-8000
email	promeo@wisc.edu
website	http://www.universityresearchpark.org/
LOCATION	Description
city	Madison
state	Wisconsin
country	USA
population	233,209
proximity to university	3 miles
prox. to downtown	approx. 5 miles
prox. complementary industries	126 companies at park
transit service to site	bus less than 1/2 mile
prox. interstate highway	near 12/14
prox. airport w/common carrier	approx. 3 miles
prox. general aviation airport	approx. 9 miles



Financing:
URP receives no city or state funds to run. URP pays property taxes and returns all profits to UW-Madison research programs. Was organized in 1984 by then UW-Madison Chancellor Irving Shain and the UW Board of Regents. University land no longer conducive to agricultural research was sold to University Research Park Inc., a separate non-profit entity that developed the land and leased it to companies interested in maintaining close contact with the university community. Today, the park provides an atmosphere custom-designed to nurture a productive combination of economic and technological development.
Uses:
126 companies that employ over 3,500 people, primarily biotechnology firms. Encourage the development and commercialization of new, cutting-edge ideas. To enhance the state and local economies, while benefiting research and educational programs at the UW-Madison. To partner with UW Madison to generate great jobs in the community while affording tremendous access and support for URP companies at the university.
Site Design:
The hub is known as the Park's technology incubator, the Madison Gas & Electric (MGE) Innovation Center. This incubator provides unique opportunities and incentives for start-up companies through specialized growth environments. Areas outside of the incubator are for companies that have outgrown it. They also allow companies to construct their own facilities on leased parcels. There is a University Research Park Design Review Board. They are appointed by the Board of Regents of the University of Wisconsin System, and have the complete authority to approve, reject, or require modification to any plan or design proposal for development or construction. They establish the conditions upon which design proposals will be evaluated and allow variations to standards and design criteria.
References:
http://www.universityresearchpark.org/

McMaster Innovation Park

SITE NAME	McMaster Innovation Park
Acreage	37 acres
Total Enclosed Area (GSF)	na
Number of Buildings	1 main, 2 heritage sites
CONTACT INFO	Mc Master University
owner	Mc Master University
address	175 Longwood Road South, Suite 105 Hamilton, ON, L8P 0A1
phone	Tel: 905-667-5500 Fax: 905-667-5501
email	info@mcmasterinnovationpark.ca
website	http://www.mcmasterinnovationpark.ca
LOCATION	Description
city	Hamilton
state	Ontario
country	Canada
population	504,559 people as of 2006
proximity to university	less than 1 mile
prox. to downtown	~1.8 miles
prox. complementary industries	industrial zone
transit service to site	1 route public transit + shuttles between university and park
prox. interstate highway	next to highway 403
prox. airport w/common carrier	10 miles to international airport
prox. general aviation airport	na



Financing:
"trust structure" governed by Board of Directors: "The essence of the structure is to give McMaster Innovation Park a fair degree of independence to function as the custodian and developer of the assets while allowing the university as the "owner" of the assets to have an appropriate level of oversight and governance.:
Uses:
Majority emphasis on cluster development of advanced manufacturing, ag/food and beverage processing, port-related industry, aerropolis, biotechnology and biomedical, film, tourism and arts, and the Downtown. There is also a workout facility & lunchtime service on-site for employees, public/open space, event, meeting and conference space.
Site Design:
Local public transit reached through one route, bike and walking trails, vehicle and bike parking for over 500. Re-use of former Westinghouse industrial complex, which incorporates a mix of uses in the main building, as well as additional buildings which are heritage sites and future development opportunities. "Multidisciplinary focus on research & innovation" in an urban setting, mobility, open space, sustainability, partnership of "academic, government, and industry," notably Hamilton is part of the "Golden Horseshoe" an area known for industry and dense population (location, location, location)." current: 4 storey building, 150,000 square feet + boiler and power house, warehouse (plans for 1.6 million sq ft of building space in 8 phases - as of Sept. 2008)
References:
http://www.mcmasterinnovationpark.ca/pdfs/sustainable.pdf

Notre Dame Innovation Park

SITE NAME	Notre Dame Innovation Park
Acreage	12 acres
Total Enclosed Area (GSF)	55,000 sq ft, up to 160,000
Number of Buildings	na
CONTACT INFO	University of Notre Dame
owner	University of Notre Dame
address	1400 E. Angela Blvd
phone	(574)631-8825
email	via website
website	http://www.innovationparknd.com/contact-us/
LOCATION	Description
city	South Bend
state	Indiana
country	USA
population	107789
proximity to university	across the street Notre Dame
prox. to downtown	near Eddy Street Commons (restaurants, etc)
prox. complementary industries	access to student job posting, library, equipment in Uni labs
transit service to site	staff shuttle around campus
prox. interstate highway	near highway 933
prox. airport w/common carrier	approx. 15 miles
prox. general aviation airport	approx. 3 miles

Financing:
Subsidized by the University of Notre Dame, entrepreneurial resources of various angel investors and venture capital firms.
Uses:
Primarily Research and Business incubation yes, network on campus this project is very well integrated with the university, faculty and students. There is a clear partnership here where renters are able to access many of the resources on campus, and the center also provides internship opportunities for the students.
Site Design:
Features a mix of uses in single buildings as well as a discrete use of buildings. Staff and faculty shuttle minimizes driving. Many sustainable BMP's contribute to energy and water efficiency, stormwater management, recycling materials, etc.
References:
http://www.innovationparknd.com/contact-us/



Portland Green Innovation Park

SITE NAME	Portland Green Innovation Park
Acreage	Small, under 5 acres
Total Enclosed Area (GSF)	na
Number of Buildings	maybe 2-5
CONTACT INFO	Daniel Spero
owner	Portland Development Commission
address	222 NW Fifth Avenue Portland, Oregon 97209
phone	(503) 823-3291
email	SperoD@pdc.us
website	http://www.pdc.us/
LOCATION	Description
city	Portland
state	Oregon
country	USA
population	529121
proximity to university	na
prox. to downtown	na
prox. complementary industries	na
transit service to site	na
prox. interstate highway	na
prox. airport w/common carrier	na
prox. general aviation airport	na



Financing:
Na-In planning process.
Uses:
The purpose of the Work and associated Work Products is to provide a clear roadmap for executing the design, development, and implementation of the Portland Green Innovation Park with the key objectives of economic development and job creation in the City of Portland, Oregon (see Section 2.4 of this RFP). A successful business plan will outline a concrete plan for the City and PDC, including public and private financial support to create an economically-viable and sustainable project.
Site Design:
Two small sites are being considered (see Referenced PDF page 22 of 24 for images). "Renowned as one of America's greenest cities, Portland is in the early planning stages for the development of a Green Innovation Park that will showcase innovative residential buildings, namely net zero energy and low carbon homes, built by local, regional and international firms. The Green Innovation Park is envisioned to become a test-bed for cutting edge residential green building techniques and technologies and to be the first demonstration project of its kind in the United States. Idea is modeled after BRE Innovation park and may include a partnership with BRE. Business plan by RFP currently in progress."
References:
http://pdc.us/pdf/rfps/2011/RFP-11-04-Business-Plan-Green-Innovation-Park.pdf

Research Triangle Park, AKA Smartsville, USA

SITE NAME	Research Triangle Park (AKA Smartsville, USA)
Acreage	7,000 acre
Total Enclosed Area (GSF)	na
Number of Buildings	multiple/ plusdevelopable acres
CONTACT INFO	RTP Headquarters
owner	RTP Headquarters
address	12 Davis Drive, Research Triangle Park NC 27709
phone	919.549.8181
email	parkinfo@rtp.org
website	www.rtp.org
LOCATION	Description
city	Durham, Raleigh, Chapel Hill
state	North Carolina
country	USA
population	1.6 million (within 60 mi)
proximity to university	in between Duke, NC State, UNC (~30 min)
prox. to downtown	NA
prox. complementary industries	170 global companies
transit service to site	Train available
prox. interstate highway	Fwy 147, 40
prox. airport w/common carrier	6 miles (Raleigh Durham Int'l Airport)
prox. general aviation airport	na



Financing:
\$2bill/yr in Research
Uses:
Industry clusters located in RTP reflect the research strengths at the region's renowned learning institutions—UNC-Chapel Hill, Duke University and N.C. State University. Established clusters such as biotechnology (including agriculture-related biotechnology and pharmaceuticals) and information technology as well as emerging ones such as advanced gaming, green and nanotechnology have strong roots in and are competitive because of the research at these universities and the confluence of academic disciplines that each provides. Many RTP-based companies have spun out of the universities.
Site Design:
built in 1960's - in process of adding on to facility.
References:
http://www.rtp.org/sites/default/files/map_Buildings-v1-030111-960w.png

River Front Research Park

SITE NAME	RiverFront Research Park
Acreage	25,920 acres
Total Enclosed Area (GSF)	111,000 sq ft 26% built
Number of Buildings	3
CONTACT INFO	Michelle Wygle
owner	University of Oregon
address	1600, 1800 and 1900 Millrace Dr
phone	(541)346-5164
email	na
website	http://researchpark.uoregon.edu/index.html
LOCATION	Description
city	Eugene
state	Oregon
country	USA
population	156,000
proximity to university	Adjacent to University of Oregon
prox. to downtown	approx. 2.4 miles
prox. complementary industries	emphasis connection with university
transit service to site	bus
prox. interstate highway	near I 105
prox. airport w/common carrier	over 15 miles
prox. general aviation airport	around 15 miles or less



Financing:
na
Uses:
Knowledge based research and organizations, specifically neuroscience and neuroinformatics, biotechnology, behavioral science, optimization technology and policy and program development for people with disabilities works closely with University, employing faculty and students.
Site Design:
A Future \$17-million, 79800 sp ft environmentally sustainable building will be LEED Silver/Gold certified. The project design includes widening the South Bank Bike Path to 14 feet, bike and pedestrian lighting and safety railings, removal of invasive blackberries, natural riparian landscaping, improved bike path connections to the UO and downtown, and a sustainable green street, among other features.
References:
http://researchpark.uoregon.edu/index.html

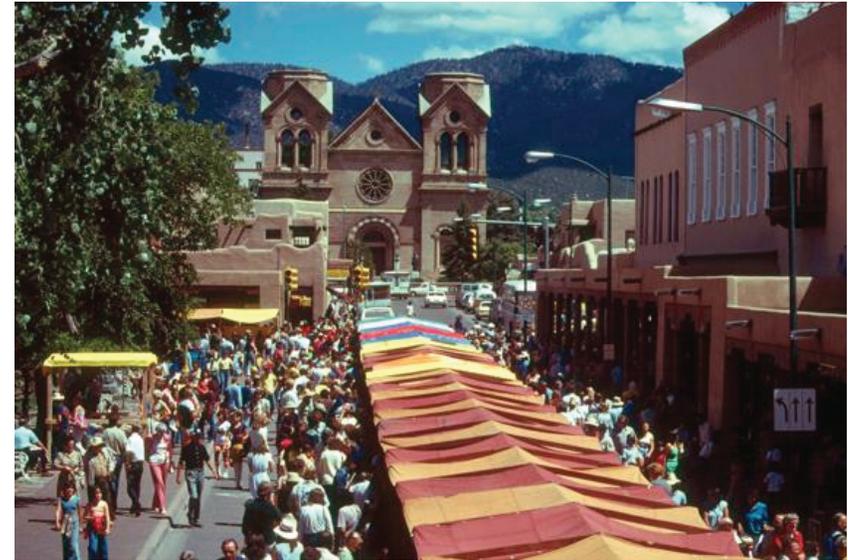
Sacramento Center for Innovation (SCI)

SITE NAME	Sacramento Center for Innovation (SCI)
Acreeage	240 Ac. total in SP; 50 Ac. near term 25 Ac. Catalyst site
Total Enclosed Area (GSF)	na
Number of Buildings	na
CONTACT INFO	Desmond Parrington
owner	CSU Sacramento
address	6000 J Street
phone	(916) 808-5044
email	dparrington@cityofsacramento.org
website	http://www.cityofsacramento.org/dsd/projects/innovation-technology-village-sp.cfm
LOCATION	Description
city	Sacramento
state	California
country	USA
population	1394154
proximity to university	Immediately adjacent (<1 mile)
prox. to downtown	4 miles
prox. complementary industries	immediately adjacent - SARTA New Venture Lab; Power Inn Alliance
transit service to site	<1/4 mile
prox. interstate highway	<1/4 mile
prox. airport w/common carrier	8 miles
prox. general aviation airport	4 miles
Financing:	
TBD	
Uses:	
The Specific Plan is anticipated to be completed by the summer of 2012. It will provide a clear focus for the land use, development standards, urban design, public facilities, utility capacity and circulation that are proposed in the Specific Plan area.	
Site Design:	
Currently, the area south of the existing Regional Transit light rail tracks, the Ramona Avenue area, is primarily heavy commercial, light industrial and industrial uses. The 2030 General Plan identified the area as an Opportunity Area, changed the land use designation from Industrial to Employment Center, and recommended further land use refinement.	
References:	
http://www.cityofsacramento.org/dsd/projects/innovation-technology-village-sp.cfm	



Santa Fe Innovation Park

SITE NAME	Santa Fe Innovation Park
Acreage	The whole city is the park.
Total Enclosed Area (GSF)	na
Number of Buildings	na
CONTACT INFO	David Breecker
owner	City of Santa Fe
address	na
phone	505-685-4891
email	david@breeckerassociates.com
website	http://santafeinnovate.org/ , http://sfip.files.wordpress.com/2011/11/sfip-brochure-11-1-11.pdf
LOCATION	Description
city	Santa Fe
state	NM
country	USA
population	143937
proximity to university	minor institutues throughout city, no clear connection with any one in particular
prox. to downtown	located within downtown
prox. complementary industries	neighboring
transit service to site	bus
prox. interstate highway	highway 285
prox. airport w/common carrier	10 miles
prox. general aviation airport	over 20 miles



Financing:
 Appears to be a County owned facility with a \$1.8M annual expense budget, unknown income from rental properties. SFIP is a self-sustaining social enterprise initiative. Participants, support staff, and facilities are assembled for each project, with minimum operating expenses for SFIP. Costs will depend on the project. The Microgrid Lab project will eventually cost millions or tens of millions of dollars, which will be raised from the private sector as investment capital. Earlier stages in the tens or hundreds of thousands will be from a mix of local, federal government, and private participants. The water workshop project will seek conventional grant funding from agencies and philanthropies in its initial stage; if it matures into an ongoing program, they will assess funding then, but a mix of public, private, and social sectors is likely. The community networking platform, We the People, is on a micro-philanthropy ("crowd funding") website, United States Artists. If that one matures, they will seek private investment capital for social enterprise development.

Uses:
 Santa Fe Innovation Park is the only "whole-city concept" innovation park. Breecker states they are in the very early/start-up stage, so a lot that has been done so far is hypothetical or proposed, rather than actual. No companies have been recruited yet, and they have a primary focus on projects. In terms of strategies on how they will locate wanted companies throughout the city will depend on the project. Breecker notes that not all projects are designed to attract companies for long-term occupancy. The primary mission is social, not economic development. The Microgrid Lab is the best case study for this; that one is a partnership with the Santa Fe Community College, which as a lot of space, and is surrounded by mixed-use developments with lots of commercial space available, and is designed to attract (and grow new) companies. There's a fair amount of available space of all kinds around the city, some academic, very limited research, some exhibition, plenty of retail, some conventional business parks, and lots of housing in this current market. But again, physical facilities are not core to their value proposition: the SFIP innovation method is the key, coupled with regional intellectual and creative capital. Space is secondary. This is the real point.

Stanford Research Park

SITE NAME	Stanford Research Park
Acreage	700
Total Enclosed Area (GSF)	10 million sq. ft. developed buildings/facilities
Number of Buildings	162
CONTACT INFO	Holly Lee
owner	Stanford Management Company
address	2755 Sand Hill Road, Suite 100 Menlo Park, CA 94025
phone	(650) 926-0300
email	hollylee@stanford.edu
website	http://lbre.stanford.edu/realestate/research_park
LOCATION	Description
city	Palo Alto
state	California
country	USA
population	64,000
proximity to university	Close
prox. to downtown	within Palo Alto
prox. complementary industries	Located in Silicon Valley
transit service to site	rail, bus, shuttle
prox. interstate highway	highway 280 and 101
prox. airport w/common carrier	13 miles to SFO
prox. general aviation airport	20 miles to San Jose



Financing:
na
Uses:
Primarily industries with scientific, technical and research oriented focus. Major representation of electronics, space, biotechnology computer hardware and software.
Site Design:
What Makes this Business Park Successful: strong university connection: sponsor joint research projects with Stanford faculty and students, conduct seminars and workshops, offer internships to students, recruit Stanford graduates, invite faculty to join corporate boards, retain faculty as consultants, etc.
References:
http://lbre.stanford.edu/realestate/research_park

UC San Diego Science Research Park

SITE NAME	UC San Diego Science Research Park
Acreage	30 acres
Total Enclosed Area (GSF)	up to 550,000 sq ft
Number of Buildings	5
CONTACT INFO	Nancy Kossan
owner	University of California, San Diego
address	9500 Gilman Drive #0982 La Jolla, CA 92093-0982
phone	(858)534-1488
email	nkossan@ucsd.edu
website	http://www-srp.ucsd.edu
LOCATION	Description
city	La Jolla
state	California
country	USA
population	32,000
proximity to university	Adjacent to UCSD.
prox. to downtown	approx. 5 miles
prox. complementary industries	hub of biotechnology
transit service to site	
prox. interstate highway	near highway 5
prox. airport w/common carrier	approx. 10 miles to San Diego International
prox. general aviation airport	less than 10 miles



Financing:
With 8 Nobel Laureates, an interdisciplinary culture & risk-taking tradition, UCSD annually attracts close to \$730 million in research funding & has spun off a third of the region's biotech industry.
Uses:
Huge area for Biotechnology Companies. near Salk Institute, Scripps Institution of Oceanography, Thorton Hospital, Moores' Cancer Center and Health Sciences Campus. Include: Health sciences, engineering, biology, physical sciences and oceanography offices, laboratories, testing facilities, product development, consulting, production and prototype creation, La Jolla Institute for Allergy and Immunology and Kyowa Hakko Kirin California Inc currently share 145,000 sq ft.
Site Design:
This new building houses LIAI's 230 employees and 16 laboratories, plus Kyowa Hakko Kirin California, Inc.'s 50-member research team. Located on 3.42 acres, the four-story facility features a multi-level atrium with overhanging balconies and a 157-seat auditorium. The "open laboratory" floor plan is designed for a highly collaborative research environment and includes specialized rooms for all aspects of molecular and cellular biology.
References:
http://www-srp.ucsd.edu

Appendix B: In-depth Case Studies

Boulder, Colorado Dispersed Park Model

Regional Context

Located in one of seven counties in the Denver Metropolitan Area, the City of Boulder is home to a population of 103,650 people and covers approximately 25.4 square miles. Sitting in one of the nation's most productive advanced technology corridors, the City of Boulder is home to the University of Colorado, Boulder and the Colorado School of Mines, making it highly attractive to research-driven business efforts. While the City of Boulder provides many programs to assist businesses looking to locate or expand within its boundaries, it is the Boulder Innovation Center (BIC), which acts as the primary incubator and the connection with Universities Offices of Technology Transfer (OTT).

The Catalyst

The Boulder Innovation Center grew out of the understanding of several local business leaders that the city needed to actively support new and growing local companies. The center was formed in 2005 under the leadership of Doug Collier, who helped to secure funding from public and private sources, appoint a Board of Directors, admit the first clients and recruit the initial advisors. The advisors who came on to the project in its early stages came from companies such as White Wave, Celestial Seasonings, Horizon Organic, Level 3, and Ball Aerospace. Many of Boulder's other

entrepreneurs volunteered their time as advisors in this early stage, establishing lasting relationships with venture capitalists, angel investors, attorneys, accountants and consultants. Under Time Bour's leadership in 2007, the BIC grew to accommodate a larger number of clients in more industry areas and was able to secure new sources of funding by expanding the number of commercialization partners.

University Involvement

The Boulder Innovation Center is a commercialization partner of the University of Colorado's Technology Transfer Office (CU TTO) and the Colorado School of Mines Technology Transfer Office (CSM TTO). When CU and CSM faculty have created Intellectual Property, the commercial feasibility is analyzed, a patent implementation strategy is created and commercialization options are evaluated through the Technology Transfer Offices. The project is then handed over to the Boulder Innovation Center, who develops an opportunity summary, matches the project with market expertise, facilitates commercialization discussions, follows up for interest and feedback and then helps form the company to license technology and launch the product. The BIC may even enter the commercialization discussion while it is still being held under the Office of Technology Transfer.

Amenities and Incentives

The Boulder Innovation Center also offers an early-stage business incubator called the Boulder Area Business Program. Designed to help start-ups overcome early roadblocks and barriers, it acts through a subsidized consulting

model with the expertise of highly experienced advisor teams to solve client's needs. Clients are matched with a Boulder Innovation Center Program Manager to act as their primary contact, provide resources, recruit advisors and manage the interaction between clients and advisors. The benefits to the clients include; a proven process to address the challenges faced by early stage companies, access to relevant, experienced professional business leaders who have faced similar issues, customized engagements and targeted, timely resources to grow your business and meet personal and professional goals as well as opportunities to develop relationships with local industry leaders. These services come at a fee to the business. The City of Boulder provides many fiscal incentives to help support the goals of their Economic Vitality Program, and the Boulder Innovation Center. The new Flexible Rebate Program allows for rebates of certain taxes and fees to primary employers in the city who meet certain eligibility and sustainability requirements. Also, a new program, the Boulder Microloan Fund is a consortium of private and public parties to provide general working capital for small businesses who cannot secure funding through traditional means. The Boulder Small Business Development Center acts as an incubator, providing workshops, one-on-one consulting and connections with other businesses.

The City of Boulder's Economic Vitality Program is an additional organization, which acts to strengthen the economic health and social fabric of the city by supporting business growth. They offer services to retain businesses, help them expand, provide outreach opportunities, help

evaluate properties and project opportunities, as well as provide assistance for companies looking to relocate. They also provide assistance analyzing development plans, feasibility of a project, and match the businesses interests with similar areas throughout Boulder. Their main industry cluster initiatives include Natural Products, Active Living and Clean Technology. The high quality of life in Boulder also helps to bring new companies to this area with its excellent schools, high-quality health care, earth-friendly policies, extensive shopping, dining, entertainment and cultural opportunities. The City of Boulder is a great place to enjoy outdoor recreation offering a comfortable climate, 45,000 acres of open space, 200 miles of hiking and biking trails and a resident discount for many of its recreational facilities through the Parks and Recreation Employee Discount Program.

Major Anchors and Industry Focus

While the Boulder Innovation Center will accept all types of businesses, the primary industries represented in the city fall into the following categories; Natural and Organic, Software, Renewable and Sustainable Energy, Bioscience, Nanotechnology, Optical and Engineered Products, Space and Aerospace Technology. These industry focuses align well with the interests of the University of Colorado, Boulder, who outlined five research initiatives in their 2030 strategic plan, which are Aerospace Initiative, Biotechnology Initiative, Computational Sciences and Engineering Initiative, Energy Initiative and the Geosciences Initiative. Some of the largest companies to locate in Boulder are; IBM Boulder, Oracle,

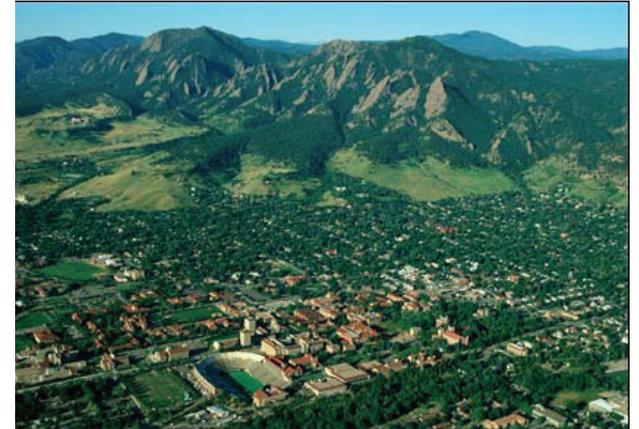
Ball Corporation, Boulder Community Hospital, Level 3, Seagate, NCAR, Covidien and Amgen, all of which align with the University's Initiatives and the BIC's focus groups. Additionally, the University is engaged in several federal and industry research partnerships. NSF funded partnerships include; Extreme Ultraviolet Engineering Research Center, Liquid Crystals Materials Research Center and the Center for Membrane Applied Science & Technology. Federal laboratory partners include; National Oceanic and Atmospheric Administration, National Institute of Standards and Technology, National Center for Atmospheric Research, University Corporation for Atmospheric Research and the National Renewable Energy Laboratory and United States Geological Survey.

Community Benefits

In 2010, the Boulder Innovation Center created 93 new jobs, expended \$21.6 million on wages and salaries, raised \$21.9 million in new capital and \$51.7 million in revenues. During the five years prior, 342 jobs were created, \$52.8 million in wages were expended, \$52.6 million new capital was raised, \$111.1 million in revenues was earned, and 6 new companies were created.

Retrospective

The BIC's website hosts numerous testimonials from business owners, whose success is due to the help that the City of Boulder provided. This commitment to fostering economic health and vitality keeps Boulder's unemployment rate well below state and national averages. The population is young, highly educated, and over half are able to hold down managerial and professional



positions. Jobs are expected to grow from the current 97,750 to 117,400 by 2030. There are currently 6,640 employers, most of which have less than 50 employees. The high concentration of advanced technology industries has fueled venture capital investments in Boulder, with \$204 million in 2008, 25% of the total for the state. The business support systems provided by the City of Boulder and the atmosphere of advanced science and technology development couple with the good quality of life and recreational opportunities to make Boulder one of the fastest growing innovation hubs in the country.

Livermore, California

i-GATE

Regional Context

The City of Livermore is located in the eastern part of the larger San Francisco Bay Area, approximately 40 miles from downtown San Francisco. The city is less than 40 miles from two renowned universities, the University of California, Berkeley and Stanford University. A third, the University of California, Davis, is just over 80 miles away. Silicon Valley, the international high tech hub, is also about 30 miles from Livermore. In addition, the community benefits from proximity to coastal and mountain recreation areas.

According to 2010 Census data, Livermore has a population of almost 81,000 people, and is considered a mid-sized city; in comparison, the City of Davis has approximately 65,000 people, a figure that does not include the nearly 32,000 UC Davis students in the city. Originally a farming and ranching community, Livermore maintains its small town, agricultural feel while providing many urban cultural activities. There is an active downtown and a growing winery business within the community.

Catalyst

The city has two federally-funded Department of Energy research laboratories, the Lawrence Livermore National Laboratory and the Sandia National Laboratories, both of which were

created in the 1950s. Together the two labs have 8,500 acres of land, the majority of which is high security. Lawrence Livermore is the largest employer in the City of Livermore.

The laboratories' initial interest was to enlist the city of Livermore's help to develop 110 acres of federally owned land that would be moved outside their gates. The project is called the Livermore Valley Open Campus (LVOC), and its goal is to encourage more businesses and research groups to co-locate and collaborate with the labs, as well as help the labs collaborate with international partners. Both labs had had a difficult time accomplishing this before due to the high level of security inside the gates. Additionally, the labs benefit from their partnership with businesses and researchers because these partners can lobby the federal government while the labs, as federal entities, cannot.

The nonprofit i-GATE (innovation for green advanced transportation excellence) was initiated by the City of Livermore, with the support of the National laboratories, to facilitate the creation of partnerships between the labs and their industry and academic collaborators. i-GATE also assists small businesses by allowing them to network and use the resources of other companies, academic partners and the two national labs. i-GATE is funded by the city of Livermore, the California Small Business Development Center and corporate donations. It receives no state funding but is designated as one of ten State of California innovation hubs. i-GATE's mission is to create more companies

and jobs focused on green transportation and clean energy technologies. The strategies it uses to accomplish these initiatives include:

- Expedited technology transfer
- Entrepreneurial assistance
- Creating collaborative opportunities
- Technology incubator
- Supporting high-growth green businesses

University Involvement

UC Berkeley helps run the laboratories. i-GATE has three components, including the Academic Alliance, which includes seven universities. Some are located in the region (UC Berkeley and Davis) and others are from different parts of the United States (the Universities of Michigan and Oklahoma, for example). These universities play an important supporting role in i-GATE, which is administered by the City of Livermore.

Amenities and Incentives

The most attractive amenity is the high quality of life that Livermore and the surrounding region affords to high tech businesses, their owners and employees. The so-called Creative Class -- mainly young, well-educated entrepreneurs -- are attracted to high-amenity communities. The City of Livermore itself is a large part of i-GATE's marketing strategy to attract innovative businesses. Potential collaborators also have easy access to capital, as well as to regional academic and professional expertise and the targeted marketing and business support services available through i-GATE. These services make the Livermore incubator attractive to start-up companies, while existing companies are attracted to opportunities available with the labs'

LVOC. i-GATE has also been advising cities on how to make their policies more attractive to innovative businesses. Their consulting activities include:

- Making regional and local policies consistent
- Streamlining permitting processes and land use regulations for high tech companies
- Implementing non-rigid zoning
- Developing Innovation Center zoning overlays

The community of Livermore benefits from the revenue and investments of new businesses and the job creation they provide. The availability of high tech jobs and entrepreneurial support serve to increase the city's appeal.

Major Anchor or Theme

"We think we can be the Silicon Valley of green transportation and clean technology," i-GATE president Bruce Balfour. i-GATE focuses on clean energy and green advanced transportation innovation, both of which are major market sectors for climate change and important areas for the labs. While emphasizing the importance of a strong theme and a compelling story, i-GATE encourages cross sector (business, academic, and federal, state, and local government) collaboration. There are three distinct components to i-GATE's efforts. NEST (National Energy Systems Technology) is the incubator that provides collaborative space for new businesses and helps them network with experts from the labs, universities and other i-GATE partners. Academic Alliance consists of seven universities;

they provide knowledge, student interns, and tech transfer opportunities to the consortium members. i-GATE is also working to establish satellite campuses near the labs. Development Corporation supports NEST by helping the start-up businesses there relocate to new facilities as they expand. The Development Corporation and NEST are separate entities due to conflict of interest issues arising from NEST's academic and municipal membership.

Community Benefits

The i-GATE consortium consists of four federal labs, seven universities, and ten cities and counties in an expanded region. These include:

- Livermore
- Dublin
- Pleasanton
- Danville
- Lathrop
- Davis
- Tracy
- Fremont
- Brentwood
- Alameda County

i-GATE's goal is to create 5,000 jobs in five years and bring a billion dollars in noneconomic impact to its 10 partnering cities. In order to attract members to the consortium when i-GATE was forming, the City of Livermore, which administers the program, focused on branding and outreach. They aimed to tell a compelling story that would help potential partners understand how they could benefit from belonging to the consortium. Once they join, i-GATE then assists its member cities with self-



branding and marketing strategies by focusing on their unique strengths and how their role in the consortium increases what they offer. i-GATE also helps communities collaborate with businesses, academic institutions and each other, providing both resources and economic development opportunities. i-GATE believes its greatest assets are the political and economic development networks offered to members, because they provide such broad and diverse connections and opportunities. Based on interviews with Rob White, i-Gate NEST and Development Corporation CEO, and Brandon Cardwell, i-GATE NEST Vice President of Programs.

Coralville, Iowa University of Iowa Research Park

Regional Context

Coralville is located in Johnson County, 75 miles from the Mississippi River, in the Eastern portion of the state of Iowa. It has a population of 18,907 and holds a close relationship with nearby Iowa City due to the presence of the University of Iowa.

The Catalyst

The UI Research Park, the University of Iowa, and local departments of Coralville and the state of Iowa share a vision of long-term economic development. The University of Iowa Research Park was part of a regional economic strategy by the public sector of regional councils within Iowa. In a regional context, UI Research Park and the city of Coralville serve as the southern anchor of a two-node, seven county economic region known as the Technology Corridor (FIG. 1).

The counties of Linn, Johnson, Benton, Jones, Iowa, Cedar, and Washington formed an alliance dedicated to economic progress, workforce development, and fostering a culture of innovation. The Technology Corridor combines the culture and the commuting patterns of the Cedar Rapids/Iowa City metropolitan areas and its neighbors. Because of the alliance, local economic and development departments worked together to help increase already exist-

ing major anchors in manufacturing, health, renewable energy, and technology services. Teams from organizations and departments within the following were involved in the development of the Technology Corridor: Iowa City Area Development Group, The University of Iowa, Kirkwood Community College, Alliant Energy, MidAmerican Energy and the Cedar Rapids Area, Priority One Developers, and Iowa City Area Chambers of Commerce.

In a community context, a public-private partnership with developer Ryan Companies US, and Coralville, along with essential State support, made the research park possible. The UI Research Park has representatives from the John Pappajohn Entrepreneurial Center, Office of Corporate Partnerships, the UI Research Foundation, the UI Small Business Development Center, Associate Vice President for Economic Development, and professional consultants in medicine, engineering, and more.

University Involvement

The UI Research Park is located on the campus of University of Iowa in the city of Coralville. There are close ties to the university since before the development of the research park. Before it was a research park, it was a research hospital where local health professionals, professors and students worked together for university and public research for the city of Iowa. During the development of the UI Research Park, many community and regional players had an interest in converting the research hospital into a research park. Major players include; John Pappajohn Entrepreneurial Center, Office of Corporate Partnerships, the UI Research Foundation, the UI

Small Business Development Center, Associate Vice President for Economic Development, and professional consultants in medicine, engineering, and more.

Amenities and Incentives

The UI Research Park has 27 lots (ranged from 4 to 7 acres) that they rent out to businesses. These contracts vary but are usually long-term such as for 40 or more years. They also implement business incubator (FIG. 2) programs - BioVentures Center and Technology Innovation Center - as part of the Iowa Centers for Enterprise (ICE) to assist the new businesses.

These programs share technical support, dry/wet laboratories, conference rooms, offices, and laboratory equipment within the park. Businesses and industries that rent land from the University will have access to all the research databases the university has to offer and, additionally, receive aid in writing federal research and development grants through Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) programs. On a micro-scale, there is free WIFI and parking.

Joe Raso, President of the Iowa City Area Development Group, claims that one major incentive that UI Research Park has is their independent, third-party certification program designed to reduce risk for local communities and property owners as well as companies called "Shovel Ready Iowa." Shovel Ready Iowa is a program provides consistent standards regarding the availability and development potential of commercial and industrial sites. Raso states that this program categorizes sites on varying degrees of economic trends, its type, local and major hubs

and resources for industries. Simply, the program recruits businesses by showing them a list of SHOVEL READY sites that match their resource demands before the development or planning stages. The program is run by a private-nonprofit between a private real-estate consulting firm and the Iowa Area Economic Development Group.

A private nonprofit is an organization that is incorporated under State law and whose purpose is not to make a profit, but rather to further a charitable, civic, religious, scientific, or other lawful purpose. They still obtain the 501(c)(3) status of nonprofits.

Major Anchors and Industry Focus

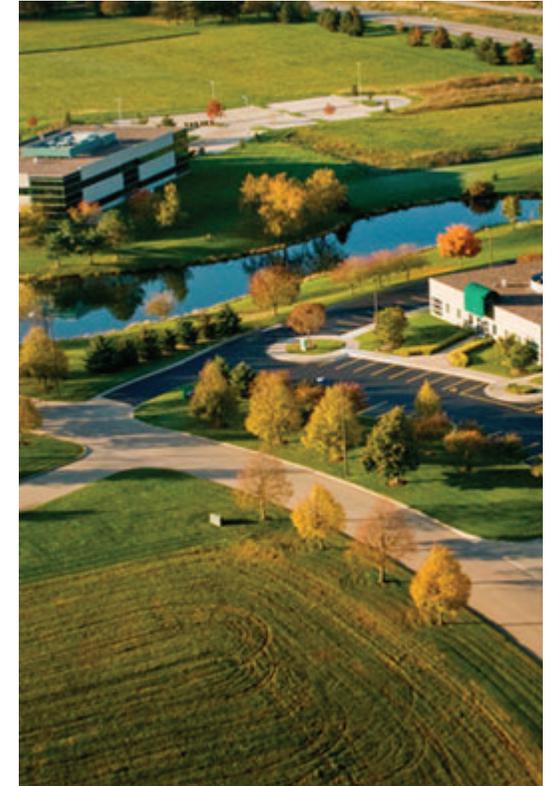
Major anchors was the Technology Corridor which offered many health and engineering services, location near the metropolitan area of the city of Iowa, Iowa Shovel Ready program, strong private, public and nonprofit connection. The first tenants to locate in the park were recruited by the Iowa Area Development Group and the Foote Consulting Group (both of which are a part of the Shovel Ready Iowa program).

Community Benefits

The UI Research Park benefits from strong University, State, City of Coralville and private, public, and nonprofit sector support (FIG. 3). Mr. Coberly, Parks and Building Maintenance Superintendent, claims that the success of the park



comes from the public support by the city and the university. He says it blends well within the community Coralville and there is few to none public opposition to projects that have been implemented within the park. The UI Research Park has programs that teach topics of health and technology and offer stem programs to the local school districts K – 12th grade. The park also hires local professionals in natural sciences, engineering, and health. By providing jobs and



Sonoma, California Sonoma Mountain Village (SOMO)

Regional Context

Sonoma Mountain Village is a 200-acre award-winning, deeply sustainable, solar-powered, zero-waste, mixed-use community making it an ideal model for the innovation park the city of Davis is currently planning. The village supports a “five-minute lifestyle,” with parks, shopping, services and a town square all within a short walk of homes and businesses. Community programs, such as a car and bike sharing, walking school buses, neighborhood electric vehicle shuttles, car charging stations, community gardening and a daily farmers’ market, create a culture that supports quality lifestyles.

The Catalyst

The Sonoma Mountain Business Cluster that is operated by the North Bay iHub. The North Bay iHub is a regional economic development collaborative formed under the State’s innovative new program to modernize California’s approach to fostering innovation and entrepreneurship. According to Kari Dunskin, Office Manager for North Bay iHub, North Bay iHub is the first business incubator in the North Bay who is strictly non-profit. Started in April 2007, there are currently 38 office buildings available for rent, as well as 10 to 12 cubicles that are available to individuals who would like to work in a professional atmosphere.

Rohnert Park was a former high tech campus that was originally built and created by Hewlett-Packard back in 1984. They were then bought out by Agiland, and then eventually obtained by Codding, who are now the primary developers of the park. Codding is an investment holding company with interests in commercial real estate, commercial construction, green building products, clean energy, and sustainable mixed-use development. Located 40 miles north of San Francisco in Rohnert Park, California, Sonoma Mountain Village is in the heart of Sonoma Wine County, with easy access to recreation, Sonoma State University and the world-class Green Music Center.

University Involvement

The University was not significantly involved with the development of SOMO; the primary drivers instead were the city, the strong public support and the developer. According to Kirstie Moore, Development Manager at Codding, the city held workshops for public awareness. The outcome was very well received, and there were no real oppositions from the public. After unanimous approval by the Rohnert Park Planning Commission, the City Council approved the requested discretionary entitlements including the Environmental Impact Report, General Plan Amendment, and certified the Development Agreement for Sonoma Mountain Village. The Development Agreement ensures the developer pays its own way and does not cause the City or residents any financial harm. It also provides Codding the development rights throughout the life of the project. Codding is now defining

plans for the homes, amenities, luxurious lifestyle, and world-class environmental attributes at Sonoma Mountain Village. Build out of the entire community is expected to continue through 2025. Sonoma Mountain Village continues to breathe new life into a vacated commercial business campus. Plans include 839,000 square feet of commercial, office and retail space, and the creation of 4,400 jobs. In fact, the community has already generated more than 700 jobs.

Major Anchors and Industry Focus

According to Dunskin, the Sonoma Mountain Business Cluster offers 30,000 square feet of conference rooms and already furnished “plug and play” office space. Start-up companies have access to capital and all the resources they need to grow to become successful, including mentoring services and an already set telecomm infrastructure. Sonoma Mountain Village strives to attract companies with a strong focus on technology or those relevant to the “green” atmosphere. West Coast Solar Energy is their classic success story. They were a company who started out in the Sonoma Mountain Business Cluster for about a year and grew successfully. Although they have moved out, they still remain in Rohnert Park. One of their major tenants today is Pix 20, a company that develops LED screens for concerts that are considered green. Dunskin notes that the Business Cluster is still in the beginning stages waiting for companies like West Coast Solar Energy to scale up.

Community Benefits

With Sonoma State University only a mile away, Dunskin mentions that the North Bay iHub partners with local colleges to spur innovation and economic development. She also notes they work with the Dominican University of California's Green MBA Program. The North Bay iHub seeks to mitigate political barriers and promote a regional approach to stimulating job creation and technology commercialization in Napa, Marin and Sonoma counties. The iHub achieves this by stimulating partnerships between non-profit economic development organizations, government entities, universities, businesses, and investment networks to accelerate investment and economic development. The structural goal of these partnerships is to provide a continuum of support for young, innovative technology companies. As the iHub program matures and additional State funding becomes available, local companies and research institutions will also benefit from enhanced national and global exposure, marketing and partnership opportunities.

Retrospective

As mentioned, things are still in its infancy stage and growth is expected to continue. Moore concludes they are just waiting for the right time in the economy to build more to include the residential space and indulge in more opportunities with the plan. SOMO is definitely expected to be a great success. SOMO's achievements so far are already impressive. In 2011, the community plan earned the highest rating, Platinum, from the prestigious US Green Building Council's



Leadership in Energy and Environmental Design for Neighborhood Developments (LEED-ND) for the neighborhood design. In 2008, Sonoma Mountain Village was awarded California's highest, most-prestigious environmental honor—the Governor's Environmental and Economic Leadership Award (GEELA) as a model for comprehensive land use planning.

Champaign-Urbana, Illinois University of Illinois Research and Innovation Park

Regional Context

The University of Illinois Research and Innovation Park is located 140 miles southwest of Chicago, in the semi-rural metropolitan region of Champaign-Urbana. With a population of less than 250,000, Champaign Urbana considers themselves a leading example of “Micro-Urbanism”, a term they use to describe a region which “possesses a highly uncommon set of desirable attributes normally exclusively associated with much larger metropolitan centers.” Such attributes include; a vibrant nightlife, arts, culture, a diverse population, a strong base of technological development, a strong sense of community, viable transit options, and a concern for Sustainability, as well as other environmental issues. Champaign and Urbana are similar to the City of Davis in size and location, relative to other major Metropolitan centers, as well as community character to the city of Davis, with the added bonus of affordable housing prices.

The Catalyst

The University of Illinois Research and Innovation Park began in 1999 out of the University’s interest in expanding its research opportunities. Prior to 2000, the University had set aside 200 acres of land adjacent to the campus through a land trust. Development began in January of

2001, and today there is currently 12 buildings at 603,721 total square feet of space that has been built-out. Development on the next building was scheduled for the fall of 2011. There have been 202 tenants in the park over the last 10 years. Future expected growth of the park is around 1.3 million square feet which will add approximately 5,000 new jobs. The Research Park at the University of Illinois was primarily a product of the University’s intentions and planning. While the University’s interest in expanding research opportunities was the largest driver, the desire of State Officials to see more economic development come out of the University’s research efforts was also an influence.

Although the City of Champaign, the City of Urbana, and the Economic Development Department did not get involved with the project financially, they did support the University’s efforts in the early phases. There was one particular member of the University of Illinois Board of Trustees who also provided support, actively lobbying for its creation. By 2000, the University had set the stage for development, designating the land for the park, adding economic development to their goals, and posting a Request for Proposal to private developers. Fox-Atkins Development Corporation was chosen for the project, and the University agreed to lease the land to them for 10 years after its development. The University has put forth \$38,399,574 out of the total \$101,785,249 that it cost to build the park. The private developer that was contracted to build the site covered the other portion of the total cost, around \$63,385,675. The construction over 10 years has contributed \$7.2 million in tax revenues for the state of Illinois.

University Involvement

The University continues to own and operate all aspects of the Park, extending the lease for another 10 years to Fox-Atkins in 2010. This relationship between the Public University and Private Developer is unique among research parks in the United States. The University also owns all Intellectual Property that is produced as a result of federal funding, conditions which are established with the Bayh Dole Act of 1980. The Office of Technology Management is primarily responsible for the operations and management of the park, working to filter projects which are in line with the University’s interest into existing research efforts, resident companies, or one of two business incubators. Illinois VENTURES LLC is the first of these incubators, which provides consultative services regarding possible funding sources and early-stage business development strategies for research driven start-ups. EnterpriseWorks is the alternative route, who provides similar incubation services to technology start-ups. The resulting revenue is divided up between the inventor, who gets 40% of the profit, the associated department within the University receives 20%, and the University itself receives the last 40%.

Amenities and Incentives

There is a large emphasis on attracting the presence of big corporations to the park, in order to provide the opportunity for start-ups to develop more entrepreneurial strategies towards innovation, through their close proximity to such large-scale, successful companies. Existing companies are attracted to the park based on the possibility of establishing research relationships with University of Illinois faculty, taking advan-

tage of lower operating costs by hiring students, and to act as subcontractors for federal grants. The Office of Technology Management(OTM) provides in-house technology protection and commercialization services, to aid in the transfer of Intellectual Property founded at the Research Park into practical application. The OTM also works with various government agencies to create economic incentives, including low-interest loan programs, workforce development training grants, angel and venture equity financing. Other amenities include a job bank program, internship programs, informal networking sessions, bio-informatics programs, access to the University of Illinois Library, other University facilities, weekly entrepreneurial networking events, small business technology transfer programs, office spaces, conference rooms, presentation facilities, various labs and equipment and even a day care center.

Major Anchors and Industry Focus

The companies at the University of Illinois Research Park specialize in a broad array of industries, many of which align with the University's strengths. Most of the companies fall into information technologies, physical sciences, life sciences and clean technology. There is a very strong focus of Computer Software and Hardware Developers in the area, and companies such as Yahoo are coming from California to locate some of their research in this region, due to the existence of a highly skilled workforce, which is also more affordable due to lower cost of living. One of the first companies to locate at the park was Motorola, who had bought up a smaller firm that the University had in their previous incubation program, to produce blue tooth

and software technology. Caterpillar is another major company who has their CatSim simulator located at the park, and takes advantage of the University's strong mechanical engineering department. University of Illinois engineering department and its various majors are consistently ranked in the top ten in the nation.

Community Benefits

Since its creation, the Research and Innovation Park at the University of Illinois has created over 1200 direct jobs, and over 700 indirect jobs, over 350 of which are for students. The estimated total payroll is around \$81,220,179, with an economic output of \$169,549,000. Annually, the park contributes around \$4.1 million in tax revenues to the state and \$1.3 million in tax revenue to the county.

Retrospective

Through the duration of the park's existence, 127 clients have passed through the incubator. Of the firms who successfully graduate, 30% remain in the research park, 65% remain in Champaign County and 78% remain in Illinois. The amount of jobs, payroll and tax revenues generated by the park strengthen Champaign-Urbana's image as an ideal "Micro-Urban" region, where well paying jobs and an educated community contribute to a high quality of life. Forbes magazine ranked Champaign-Urbana 20th among 168 other small cities in its Best Places for Business study of May 2004. The region also ranked 11th best in educational attainment, measured by the percent of the population over 25 who has a bachelor's degree or doctorate. Inc.com ranked the University of Illinois Research park as one of the top 10 Start-up incubators to watch.



Columbia, South Carolina Innovista Research Park

Regional Context

Innovista Research Park is a research center at the University of South Carolina. Innovista is still currently under-going development. The project has been delayed due to a lack of funding; so far, only half of what was originally planned has been built. The planned call for the construction of four buildings, two of which would be public for use by the school, and the other two would be for private businesses. Presently, only the two buildings for the university has been built, Horizon I and Discovery I. Horizon I is mainly focused on clean energy research, such as nuclear and future fuels. Discovery I is more focused on health and sciences, such as pharmaceutical research.

Innovista is located on the University of South Carolina campus in Columbia, South Carolina. It is a 500-acre lot, divided into two parcels that are well integrated with other university buildings. The planning process began in 2005 and the first phase, which included the completion of the Horizon I and Discovery I buildings, was completed in 2007. Horizon I is a five-story building with dry lab and wet lab space, totaling 125,000 square feet. Discovery I is also a five story buildings with wet lab and vivarium lab space which also totals 125,000 square feet.

Catalyst

The University of South Carolina president at the time, Andrew Sorensen, was one of the main drivers behind the project in its early stages. Earlier that same year, the University of South Carolina was moved to Tier One for the Carnegie Foundation for research achievements. Sorensen wanted to connect all the success in the research labs to creating jobs. Sorensen was the big pusher for the university to create a research park. Also in support of the project was Harris Pastides, the current president of the university, who was the Vice President of the research department at the time. Pastides continues Sorensen dedication to developing a strong research facility and brings his own drive in the importance in developing Innovista.

A majority of the funding came from the university; therefore the state indirectly was a contributor. Other funding sources included private donations, the city of Columbia, and collaborations with other partners. The city contributed by contributing to paying for the parking structures that would be built next to the new buildings.

Role of the University

The university was the main driver of the project. The university did not do the actual design of the research park, but remained as an active supervising role. The research park buildings are designed in the same theme as the other university buildings around it.

The first tenant at Innovista was the Arnold School of Public Health. There was also, a group of interested tenants for the Horizon II and Discovery II buildings that never got built, so they moved to downtown to a privately owned space. However, they still partnered with Innovista. Some of the labs are rented out to the university's engineering department Horizon I is in the process of finishing up construction of its wet lab which will be rented out to private businesses. Horizon I is currently at 80% capacity, and Discovery I is at 45% capacity. There is no primary industry focus because they don't want to limit anyone's opportunity from working with the university. Tenants of Innovista are provided access to university facilities, such as the fitness club, library, and discounts at the bookstore.

Community Benefit

The community has been very supportive of the project because of its potential to create and bring in more jobs. Innovista itself has not created any jobs, but Innovista and its partners have helped created over 40 companies. The inability to secure funding for Discovery II and Horizon II led to those two buildings not being built. These two buildings in the original plan were going to house private businesses. Without the building, private businesses were not able to locate there, resulting in no new jobs. This had a negative affect on public opinion. Many people thought the project failed in this aspect.

Innovista was supposed to offer a place for recently graduated students, who were starting their own company to reside, but rent was too high and none of the recently graduated students ended up signing with Innovista. The project is located in a mixed-use community. The research park buildings are built right next to an entertainment stadium, classrooms, restaurants, and condos. Bike and pedestrian transit opportunities: The project was designed with the mindset of complete streets. The streets were designed with a lot of pedestrian walkways and bike lanes to make it not only safer, but more convenient for people to walk and bike in the community.

