Executive Summary
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Prepared by:
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Civilis Consultants
ABOUT THIS PROJECT

Yolo County is rich with both history and natural resources. The county’s accomplished farmers, successful agricultural businesses, world class research and innovations, and forward-thinking policies have kept its farmers and communities at the forefront of the agriculture and food industry. The gross value of Yolo County’s agricultural production was valued at over $720 million in 2013 – 12.9 percent higher than the estimated value in 2012 ($645 million) – and the agricultural sector is identified expressly in the county’s General Plan to be “supported, sustained, reinvented, and diversified”. Furthermore, the Plan’s goals and policies “emphasize wildlife-friendly farming, local food preference, community revitalization, creation of jobs and economic health, business outreach, expansion of tourism, and collaboration.” This combination of heritage, knowledge and contemporary planning has made Yolo County a leader in its policies and programs to enhance agriculture and working landscapes, which are mainstays of the county’s economy, environment, and culture.

International demand for California food products, increasing demand for locally grown food, and the attractiveness of the region to processors and food entrepreneurs are just a handful of opportunities that may be taken advantage of given the County’s support of agriculture and recent food system momentum. However, through engagement of local agricultural growers and stakeholders, the Sacramento Area Council of Governments (SACOG), via its Rural-Urban Connections Strategy (RUCS) program, has identified gaps in the regional food system and the need for expanded agricultural infrastructure, particularly as a factor to catalyze local market opportunities. RUCS also provides a means to understand how changing cropping patterns and production systems may benefit from policy and public investments, such as farmworker housing or roads. The program also helps assess how changing markets and cost and availability of inputs to production may impact agricultural viability. Much like the technical resources available to conduct urban planning, RUCS offers tools to help planners and policy makers plan for rural areas to cultivate opportunities and address challenges.

The Yolo County Case Study was conducted in response to requests from local elected officials and staff to explore economic development opportunities related to food production and processing. The study focuses on the “West of 505” portion of Yolo County, where stakeholders had already begun looking at ways to bolster their communities, in part by tapping into the rapidly growing local food market. With funding from the California Strategic Growth Council, SACOG has been able to conduct analyses that examine agriculture and crops, value-added processing, tourism, and community design for economic development in western Yolo County. The case study offers additional information and resources to assist Yolo County stakeholders with their local efforts. While some desired analyses (e.g., farm-to-market trucking activity) require further data and analytical work, this report leverages SACOG’s RUCS toolkit for local efforts and lays a foundation for future work that builds upon the county’s leading agriculture policies and planning efforts, and the work of a range of local organizations.

SACOG is an association of local governments in the six county Sacramento region that provides transportation planning and funding and serves as a forum for regional issues, including linking land use, transportation and air quality. RUCS is the region’s rural economic and sustainable strategy, which is complementary to the Blueprint – the region’s overall growth strategy. (http://www.sacog.org/rucs/)

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1 County of Yolo. 2009. 2030 Countywide General Plan. Woodland, CA.
Together, this work forms a suite of data and tools to help better understand the potential tradeoffs and outcomes from land use and production decisions. The results of this case study may assist the County in leveraging its agricultural assets to reach its policy goals and develop strategies that create more opportunities for continued growth in the agricultural economy. A standalone full case study documents the detailed analysis, mapping and modeled scenarios that inform the project’s results. This companion executive summary synthesizes that project work into key findings.

**KEY FINDINGS OF THE YOLO COUNTY CASE STUDY**

For this case study, the geography analyzed in depth is the western portion of Yolo County, including land west of Interstate 505. This geography incorporates the City of Winters, the town of Esparto, and the agriculturally diverse Capay Valley, as well as much of unincorporated Yolo County’s rich agricultural land. With its concentration of locally-serving farms, orchards and vineyards, the West of 505 area is a distinct, diverse and important part of the county’s overall agricultural sector and a leader in the rapidly-growing local food market. It represents a unique slice of intensely agricultural land, provides a destination for recreation and tourism, and incorporates a historic downtown urban fabric that is fueled by the agricultural and recreation economy.

The study focuses on a variety of agricultural futures and their implications for the rural economy. The agricultural scenarios represent a small subset of possible outcomes for western Yolo County and focus on shifts in water demand, crop production costs, financial return and local market demands. Another key component of the case study is an analysis of additional assets supporting a successful agricultural economy, such as food hub investment, rural tourism, and land use patterns (including siting of crops and production facilities). The final component of the case study includes research on place-based development strategies that both reflect and heighten the rural economy. Through these components, the case study provides a comprehensive review of the agricultural economic ecosystem of western Yolo County.

**Maximizing Local Agricultural Production**

The case study provides a selection of scenarios that delve into potential strategies for maximizing the economic metrics of agricultural production, of which the low water per ton of product, tree crop and local market mix scenarios perform the best. Using the study’s base case of existing conditions as a comparison, economic success may be measured in a number of ways, such as the overall output of the agricultural economy or the profitability of farmers. Measuring the scenarios by gross returns shows the capacity for continued growth in the overall output and value of the western Yolo’s agricultural economy in the future.

The low water per ton of product scenario (mainly greens and nightshade crops) has the greatest return on investment (ROI) (64 percent) and the second-highest gross returns ($635 million) of the scenarios, demonstrating that growers can still make a substantial profit when cutting back on water use. The tree crop
scenario (mainly nuts and fruit trees) also earns a remarkable 53 percent grower ROI; however, these results are not immediate due to the high establishment costs and long maturation period (five to seven years) of orchards. A crop mix of fruits and vegetables grown for the local market scenario sees a much higher gross return ($1.82 billion) and net revenue ($476 million) than the other scenarios, but a lower ROI (35 percent). Although the local market scenario requires the most labor, the scenario yields a more than 500 percent increase in cash flow in western Yolo’s agricultural industry over the base case scenario and nearly a 300 percent change over the tree crop scenario (not taking into account additional benefit from the economic multiplier of effect or economic value-added further along the supply chain). The $1.82 billion cash flow of the local market scenario may be of particular interest to banks and lenders when considering offering credit for capital and operations.

In addition to having an outstanding 57 percent ROI, the vegetable protein scenario represents an opportunity to capitalize on local market opportunity. A growing population with a nutritional need and/or consumer preference for high quality plant-based proteins leads to an increased demand for particular vegetable and nut crops. A variety of plant-based proteins are also components of value-added products such as energy bars, which are progressively using minimally-processed whole ingredients such as nuts, dried fruits and whole grains. Many of these ingredients are currently grown in Yolo County. Given the additional market outlet of companies like Clif, Larabar, Powerbar and Probar, which are likely to further increase demand, vegetable protein crops offer an opportunity for growers to diversify and harden revenue streams. Together, the findings of these various scenarios emphasize the continued and potential future contribution of agriculture as an economic driver in the county through both farm output and value adding activities.

**Consideration of Tradeoffs in Agriculture Production**

Water has been a center-stage concern to Central Valley growers, residents and policy makers as California faces the fourth year of one of the most severe droughts on record. Water is the lifeblood of agriculture and the drought presents potentially serious implications to its productivity. While the case study’s range of scenarios highlight strategies to create further value and return in the county’s agriculture sector, they also call attention to the tradeoff between economic and environmental considerations.

The case study includes scenarios representing the theoretical boundary conditions of low and high agricultural water use in the west of 505 study area, while holding the acres in production constant. The tree crops scenario, which is nearly equivalent in water use to the high water per ton of product scenario, provides an example of these tradeoffs. As described above, the estimated gross output and ROI...
from planting more orchards is impressive, but results in an increase and hardening of water demand. Alternatively, the low water per acre and low water per ton of product scenarios demonstrate possible strategies for continuing to support a vibrant agricultural economy even during drought conditions. Both yield a higher net revenue ($103 and $247 million, respectively) than the base case and the low water per ton of product scenario also has a much higher return on investment (64 percent) than the base case. It is important to note that while these cropping scenarios perform well, they are realistic only if the market can absorb the products included at the estimated volumes and at prices that result in a profit to farmers.

Media discussion has also focused on the water demand of the nut crops included in the high water scenarios. However, when considering tradeoffs, it is also important to think about the comparison being made. The case study’s vegetable protein scenario demonstrates that while nuts may have higher water demand as compared to vegetable crops, they are a more resource efficient source of protein by both acreage and water when compared to meat. Production of one ton of beef requires nearly 12.5 acre-feet of water to produce, while one ton of vegetable protein requires only 2.25 acre-feet. While there are a number of variables that can change water demand for all crops, this analysis provides a baseline average condition that helps demonstrate the relative impacts of different crops responding to various markets.

Local Market Opportunity

As described above, the case study also includes a local market scenario, which provides the highest gross returns of any scenario analyzed (1.82 billion). Furthermore, the food hub cropping pattern and the agricultural infrastructure it provides would facilitate an increase in fresh, healthy and locally-produced fruits and vegetables in the regional food system. Using SACOG’s produce consumption calculator, staff estimated that a hub of 23,000 square feet could feed the full fruit and vegetable consumption levels of over 13,000 people. A larger shift to local fruits and vegetables modeled in the local market scenario could support many such hubs across the region. This production and food aggregation and processing could fill growing demand for locally grown food, particularly since only two percent of the food consumed in the region is grown in the region (based on SACOG’s estimates using Agricultural Census data).
Agricultural and recreational tourism provide another opportunity to augment the economics and industry of the area by capitalizing on local rural heritage. Increasingly, tourism recognizes and relies upon rural landscapes maintaining their viability and attractiveness, and Yolo County is fortunate to have a beautiful rural landscape that both draws visitors and diversifies and bolsters its rural economy. With the recent designation of Barryessa Snow Mountain National Monument immediately west of Yolo County, it is estimated that western Yolo could experience a 30 percent increase in visitation, adding an estimated $50 million in annual economic activity and $800,000 in tax revenue over five years. Likewise, the county could expect to see an increase in local agritourism as the regional farm-to-fork movement continues to expand. Such rises in tourism could augment the demand for accommodations such as lodging, food (e.g., restaurants and grocery), entertainment, fuel and especially transportation facilities. Economic development, tourism and transportation strategies for rural jurisdictions and businesses will help western Yolo maximize this market opportunity. To that end, the case study incorporates a plan for bicycle tourism using the City of Winters and surrounding western Yolo County as its primary case study. The plan provides analysis for respecting and leveraging the agricultural and natural resource economy of the area for thoughtfully-planned outdoor tourism.
**Transportation**

Rural transportation analysis is an evolving component of the RUCS program. In the past, SACOG has assigned truck trip rates to crops to assess impacts to road wear and tear, which impacts maintenance schedules and funding. However, as more detailed cropping patterns are modeled and as rural communities and tourism activities are incorporated further into RUCS, the usefulness of past work has waned. SACOG is beginning more detailed analysis of rural transportation issues, particularly related to changes in cropping patterns and processing as exemplified in a recent analysis of Pacific Coast Producers (PCP) in Woodland.

PCP and local officials initiated the study (included as an appendix to the main case study report) after concerns arose that the implementation of cap-and-trade could possibly result in restrictions to or closure of the PCP tomato processing facility. Analysis of transportation and greenhouse gas (GHG) emissions demonstrated the GHG tradeoffs of processing facilities siting. While a processing facility may emit GHG emissions, closing the facility and increasing the vehicle miles traveled for growers transporting crops for processing results in greater GHG emissions overall. This work illustrates a key aspect of the important relationship between processing (a major component of the market) and crop production. Additionally, studies conducted by UC Davis and the American Farmland Trust have demonstrated the difference in the magnitude of GHG emissions between agricultural and urban land use, highlighting the climate benefits provided by agricultural land. These studies lay a foundation for future work to assess rural needs for transportation investment as markets, cropping patterns, tourism and rural communities change. As with urban areas, data and models linking rural land use activities and future plans are important tools to determine transportation needs and impacts, and target funding where it is needed.

**Enhancing Established Communities**

While agriculture is the essential underpinning of the food system, the rural communities that develop around agriculture production and processing are also important to the agricultural economic cluster. The case study uses downtown Winters and Esparto’s Main Street as examples to demonstrate the potential value that comes with investing in existing rural community assets, especially when development maintains the authenticity of rural life and embraces the local context. This approach to development helps local developers and existing and potential business owners connect local farm outputs to regional market opportunity, adding to the fabric of the existing districts and creating more locally-based wealth and economic stability.
The case study tests the economic viability of this type of asset-based development in Winters. In tandem with City efforts focusing development into the downtown district, the downtown form-based code encourages character-preserving design and development, and includes flexible fee structures that position the city well to perpetuate its charming and unique historical character. The results of the case study illustrate that small lot infill development in a rural downtown like Winters’ makes sense not only to authentically represent the community and enhance the vibrancy and diversity of a downtown district, but indicate that this type of development also pencils out economically for potential developers as well as fiscally for the community. Given differences in permit costs, impact fees, and especially construction and parking costs, a small-lot infill scenario that represents the study’s place-based concept returns a lower net income, but an ROI that is double that of a large-lot greenfield scenario, which mimics a more typical development pattern. While more costly upfront and to maintain, the net revenue associated with more compact development in the downtown district pays off at a rate four times higher than large-lot retail on an arterial corridor.

Conclusion

The West Yolo case study offers information on a range of possible scenarios the county could see in the future. These scenarios and supportive reports, such as the RUCS’ food hub feasibility study and the Pacific Coast Producers case study, can be used to build strategies around new market opportunities while understanding potential challenges. The work builds upon years of effort by Yolo County and the City of Winters, as well as organizations like the Yolo Agriculture and Food Alliance, the Yolo County Farm Bureau, Community Alliance with Family Farmers, Capay Valley Vision and many others. The study recognizes that economic development in the agriculture and food cluster is more potent when rural communities are not just way stations for products being processed or hauled to market, but are also part of the market itself. Outreach for this study engaged rural community stakeholders on strategies to ensure they create diversified economies that maintain their character and quality of life. This work broadens the concept of the rural-urban connection by taking a holistic approach to analyzing the rural fabric, illustrating the synergy between a strong agricultural industry, tourism and vibrant and sustainable rural communities.
However, there is an even broader context and implication for this case study and other RUCS efforts. While local jurisdictions and the region have actively planned for their urban communities, they have planned for their open lands mostly as a way to mitigate the impacts of urbanization – Yolo County being an exception given its more comprehensive conservation plan. If one views land use, whether it is a subdivision or an orchard, as a result of what owners think is the most profitable way to develop that land, then he/she can employ similar ways of conceptualizing and studying changes. This case study and RUCS generally offer a platform for proactive rural planning, providing a means by which stakeholders can forecast and prepare for possible futures and incorporate that with similar planning conducted for urban areas. Moreover, this integrated planning approach can help decision-makers better understand the tradeoffs in setting planning objectives, as well as offer a means by which to link both rural and urban lands to local and regional transportation planning and other infrastructure investments.

RUCS has focused extensively on conserving natural resources – notably the region’s agricultural lands – through strategies that increase revenues from these lands, thereby increasing their value as open space assets. Case studies like this one provide a foundation for strategies that not only support conservation efforts, but also increase the capacity of the landscape to generate economic value and jobs, making agriculture an even more impactful economic engine. When coupled with urban planning efforts such as local land use plans and SACOG’s Blueprint and Sustainable Communities Strategy, local and regional RUCS efforts demonstrate strategies for conserving land, more efficiently providing municipal services, and positioning rural economic development opportunities more prominently into more comprehensive regional strategies. Ongoing work at SACOG will continue to provide technical support and new information that will build upon the findings contained in this report. Furthermore, though this report is focused on western Yolo County, the outcomes and tools can be applied in many other areas inside and outside the SACOG region.
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