Davis Downtown Plan

Sustainability Recommendations from DPAC and Sustainability Review Team
10-24-18

Background

Over the last several weeks, a group of interested Downtown Plan Advisory Committee (DPAC) members and other local experts/Commissioners have met to discuss recommended sustainability measures for the Downtown Plan, based on a request for further information following the September DPAC meeting. This 'strike team' was intended to meet over a short period of time to prepare information for presentation to the special October DPAC meeting and to the Opticos consultant team. The group consists of Christine Granger, Catherine Brinkley, Deema Tamimi and Larry Guenther (DPAC), Richard McCann and Lorenzo Kristov (energy experts; Utility Rate Advisory Commissioners) and Evan Schmidt (Natural Resources Commissioner). Eric Lee and Kerry Daane Loux, City of Davis staff, assisted with coordination. On October 23, DPAC reviewed and approved the recommendations, including several comments and amendments that have been incorporated into the one-page summary and this document, with the following motions:

1. DPAC moves to pass forward the attached Sustainability Recommendations to the consultant team and ask them to consider how best to integrate them into the Downtown Specific Plan.(Arnold/Meyer unanimous)
2. DPAC moves to pass forward to the consultant team the recommendation to consider creation of a Downtown Davis Economic Development Plan as an implementation action (additional scope) following completion of the Specific Plan, also informed by input from community outreach, Planning Commission and City Council comments, and other ideas generated during the Specific Plan development process. (Arnold/Yacksan unanimous)

While the full DPAC expressed strong support of the Sustainability Recommendations, one of the main concerns expressed was related to economic feasibility of incorporating these goals into the Specific Plan. The response was that the sustainability recommendations should be studied along with other economic feasibility factors for implementation of the plan. Additionally, it was noted that many sustainability components will result in overall cost savings, energy efficiency and improved community values over time.

Sustainability 'Strike Team' Process

The group decided to use the ten 'Sustainability Themes' that were created by participants in the two sustainability focus groups that met during the first and second Downtown Plan Community Design Workshops (Charrettes). The team also used the Sustainability Implementation Matrix prepared by the consultant team as a resource, but attempted to prioritize the many ideas into cohesive recommendations. A new 'Big Ideas' matrix with theme areas identified was created and filled out individually by each team member.

The ten theme areas discussed, in no particular order, are:

Sustainability Themes

Social Equity
Economic Development
Quality of Life
Energy
Education
Mobility
Water
Waste
Food
Living Landscape

THEMES/TOPIC	BIG IDEAS	RELATED ITEMS FROM MATRIX OR OTHER SOURCES (other sources include charrette content, UCD class ideas)	Y/N Unique to DT?	NOTES
1) SOCIAL EQUITY	A downtown for all ages and abilities, including opportunities for (children -tot lots, Teens and young adults, Seniors), Accessible design, Housing affordability, economic access	RELATED ITEMS FROM MATRIX OR OTHER SOURCES	Y/N Unique to DT?	NOTES
A. big idea:				
B. big idea:				
2) QUALITY OF LIFE	Human environment and livability, Health, , Recreation and active lifestyles, Heat resilience—high heat and extreme events, Shade, Aesthetics	RELATED ITEMS FROM MATRIX OR OTHER SOURCES	Y/N Unique to DT?	NOTES
A. big idea:				
B. big idea:				
3) ECONOMIC DEVELOPMENT & RESILIENCY	Eco-district development, Jobs , Housing/neighborhoods, Businesses/Commercial (Green' business—low carbon, local, energy efficiency, etc.) Financial institutions, Access for local small business, Affordability and economic equity, Communication/broadband, Tourism	RELATED ITEMS FROM MATRIX OR OTHER SOURCES	Y/N Unique to DT?	NOTES
A. big idea:				
B. big idea:				
4) ENERGY	Climate-related design elements (Microgrid considerations/Distributed energy resources and storage), EV charging, Solar PV and community solar opportunities, Decarbonizing the grid, Electrification vs. natural gas, Biomethane, Architecture and engineering—new and retrofit, Embodied carbon issues/life cycle emissions	RELATED ITEMS FROM MATRIX OR OTHER SOURCES	Y/N Unique to DT?	NOTES
A. big idea:				

Sample of Sustainability 'Big Ideas' Matrix completed by all team members for discussion of 10 themes

Following a discussion of 'big ideas' in each theme area, the group agreed on an overall aspirational goal, with five major **Downtown Specific Plan Goals** and suggested *Implementation Steps*, below. Because many of the goals may fit in more than one theme area, the symbols above are used to identify multiple themes where appropriate.

Also, it should be noted that existing and on-going upgrades to CALGreen requirements (Davis currently requires CALGreen Tier 1); City of Davis reach code standards; and evolving state legislation, goals and standards are all assumed to be included in the baseline requirements. These existing standards already required by local or state are not addressed in the recommendations. However, emerging trends and opportunities for future planning should be incorporated such as addressing climate change, transportation opportunities, and other issues.

Davis Downtown Plan

Recommended Sustainability Goals and Implementation Steps

Aspirational Goal:

Downtown Davis leads by example in sustainability, including leveraging all available resources such as sustainability expertise and intellectual capital from UC Davis, state and regional partnerships, becoming a ***carbon neutral, equitably accessible, water efficient, zero waste, resilient community by 2040***.

Goal 1: Create a carbon neutral downtown Davis by 2040 (five years ahead of California's 2045 goal) ☼ 🏵 ♫

- **Goal 1.1:** Electrify all downtown buildings by 2040 and incentivize state-of-the art energy efficient and sustainable building design ☼

  Implementation Steps:

  - Decommission natural gas in downtown by 2040, and require purchase of the highest renewable energy (100%) available from local utility providers for electricity not produced on-site
  - Transition all restaurants, commercial, office and residential uses to electric space and water heating, appliances, etc. including heat pumps for new or replacement boilers and other energy efficient technology
  - Incentivize new and emerging technologies in building design and energy efficiency for new and retrofit projects
  - Require net zero energy for new and retrofit construction, beyond current Title 24 and CALGreen requirements
  - Implement energy production (e.g. solar) requirements on all buildings (residential and non-residential/commercial) where not currently required
  - Explore collaboration with UC Davis' plans for district heating system
  - Embed electrification requirements in zoning, building code

- **Goal 1.2:** Create a downtown that is microgrid and storage ready ☼ 🏛

  Implementation Steps:

  - Coordinate microgrid feasibility and planning with local utilities
    - Look into UC Irvine recommendations for building lines/storage vaults/tunnels to accommodate grade of electrical current
    - Also see: Ali, A., Li, W., Hussain, R., He, X., Williams, B. W., & Memon, A. H. (2017). Overview of current microgrid policies, incentives and barriers in the European Union, United States and China. *Sustainability*, *9*(7), 1146. www.mdpi.com/2071-1050/9/7/1146/pdf
  - Consider electric vehicle (EV) fleet as part of electric load demand management
  - Embed microgrid and storage requirements in zoning, building code

- **Goal 1.3:** Explore creation of Carbon Mitigation Fund ☼ 🏛
  Implementation Steps:
  - Municipal fund: Cost savings from energy efficiency and greenhouse gas (GHG) savings go into fund to be used to spur further investments in reducing energy use (e.g. similar mechanism on campus)
  - Residential/Commercial fund: Implement developer impact fees (See Utility Rate Advisory Commission (URAC) resolution for recommended language on district-wide mitigation fund)

- **Goal 1.4:** Electrify all fuel-dependent downtown transportation ☼ 🚲
  Implementation Steps:
  - Plan for electric vehicle (EV) charging for all vehicles (personal, shared, commercial, bus/shuttle), and ensure electrical infrastructure to handle loads
    - Provide plug-ins for street food trucks (to eliminate need for generators) and coordinate with EV charging infrastructure
  - Fully electrify City of Davis fleet and Unitrans fleet
  - Embed EV infrastructure requirements in zoning, building code

- **Goal 1.5:** Set goal to minimize single occupancy vehicle (SOV) use in downtown especially for residents 🚲 🏛 ☼ ♫
  Implementation steps:
  - In street design, give priority to shared transportation choices over SOV. Call out specific goals or access for car sharing, transportation network companies (TNA) such as Lyft or Uber, bicycles, pedestrian amenities, public transit and multi-modal hubs
  - Make Amtrak station more integral to downtown to promote walking and biking along with regional transit
  - Unbundle parking space costs from housing costs (already part of DPAC suggestions)

- **Goal 1.6:** Set goal to increase active transportation modes in downtown (pedestrian, cyclist and public transit) to over XX% by 2040 (work with City staff to set goals and to reflect that Davis is around 20% of commuters cycling now; Stockholm is 25%; making 50% would be a splash for any city).
  Implementation Steps:
  - Improve connectivity to downtown and through downtown for bikes

- **Goal 1.7:** Activate the street 🏵 🎓♫ 🚲
  Implementation Steps:
  - Pilot projects to remove cars from downtown streets to test model for permanently closed to car streets
  - Promote street food/vendors to encourage entrepreneurship and walkability

- In addition to or instead of cool street paving, use street painting and murals to lighten street and reduce urban heat island effect; murals that celebrate diversity, sustainability and have educational component (e.g. LA: https://www.mnn.com/earth-matters/climate-weather/blogs/how-los-angeles-beating-heat-white-painted-streets; creation of lighter land surfaces "could help to lower extreme temperatures… by up to 2 or 3 degrees Celsius" in much of Europe, North America, and Asia, says Sonia Seneviratne, who studies land-climate dynamics at the Swiss Federal Institute of Technology (ETH) in Zurich. From: https://e360.yale.edu/features/urban-heat-can-white-roofs-help-cool-the-worlds-warming-cities). This option can be implemented at minimal cost
- Design complete streets 🚲
- Embed street activation requirements and incentives in zoning code

- **Goal 1.8:** Create 'Sustainability Center' to highlight existing and emerging sustainable technology, provide outreach and educational opportunities, include assistance on goal implementation and economic development, track/communicate progress🎓 🏛 🌀♫ ☼
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Goal 2: Create and maintain equitable community access🌀 🏛♫☼ 🚲

- **Goal 2.1:** Make downtown a residential/mixed use neighborhood by setting goal to create XXX housing units downtown (X-fold increase by 2040), including Nishi project proposal to add 2,200 beds in 700 units 🌀 🏛♫☼ 🚲

  Implementation Steps:
  - Remove banking ordinance to incentivize banks to sell for redevelopment (already part of DPAC suggestions)
  - Create everyday downtown amenities for walkability and livability (e.g. grocery, library, pharmacy) 🌀♫☼
  - Consider delineating Tax Increment Financing district downtown to promote high density development and permanently affordable housing; coordinate effort with federal opportunity district financing
  - Create indoor and outdoor spaces for children's play (e.g. pocket park with sustainability theme, climbable art structures, etc.), senior spaces and spaces for community building
    - Implement a design charrette for park(s) programming, design and functionality, site selection and embed in Capital Improvement Plan to finance and construct park

- **Goal 2.2:** Create a variety of housing options in downtown, including affordable housing as specific income levels (very low-, low-, moderate), microunits (400 sf) and workforce housing downtown in order to limit commuting-related GHG emissions and promote downtown economic development and walkability 🌀 🏛♫☼ 🚲

Implementation Steps:

- Alter form-based code, zoning, building code and permitting process to align in allowing 400sq ft or smaller units or creation of communal (shared living/kitchen space) (already part of DPAC suggestions)
- Unbundle parking space from development to reduce housing costs (already part of DPAC suggestions)

- **Goal 2.3:** Make downtown attractive to wide demographic, economic and cultural mix of residents, visitors and businesses

  Implementation Steps:

  - Implement with Universal Design throughout downtown
  - Provide bathrooms/water fountains/benches for all to have access
  - Ensure downtown lighting quality is appropriate for residential uses, such as converting street lights to solar/blue to reduce light pollution
  - See agricultural and food themes identified in Economic Development Plan information below
  - Embed requirements in form-based code for residential, commercial and public spaces (already part of DPAC suggestions and California building standards: http://www.hcd.ca.gov/building-standards/state-housing-law/universal-design.shtml)
- **Goal 2.4:** Develop ways to encourage downtown reinvestment, vibrancy and maintenance of physical and social infrastructure, such as promoting and partnering with Pathways to Employment and other programs

Goal 3: Use a high level water efficiency; protect and enhance living landscapes in downtown

- **Goal 3.1:** Set specific goals for water conservation and gray water reuse (XX%)

  Implementation Steps:

  - Graywater plan: Integrated water collection and reuse through descending uses and support landscaped greenery (e.g. shade trees and interstitial habitat). Plan for graywater integration with landscaping, especially for multistory buildings (Look to San Francisco ordinances)
  - Consider requiring Net Zero Water in downtown--capture and reuse all water, e.g. dishwashing systems, appliance and mechanical system recapture, stormwater, etc.
  - Embed graywater ordinance and requirements for all downtown buildings in zoning code
- **Goal 3.2:** Enhance the urban forest and incentivize connective greenways through downtown with landscapes integrated into buildings and emphasis on shade canopy

Implementation Steps:

- Foster awareness that greenspace is important to mental health and quality of life
- Select appropriate tree species, protect and enhance tree canopy and living landscape
- Encourage edible landscapes where appropriate
- Implement 'cool parking and shading guidelines'
- Create Pollinator highway and greenspace connector to Putah Creek bikeway and UC Davis Arboretum.
- Embed requirements in zoning with density bonus for desired features, consider specifying sq ft greenspace required per sq ft building construction, and/or tie greenspace to density and population
- Implement greenspace standards for commercial in addition to residential (currently there are none) so that downtown workers have recreation spaces

Goal 4: Implement Zero Waste in Davis Downtown

- **Goal 4.1:** Set specific goals for zero waste in downtown

  Implementation Steps:

  - Consider increasing diversion requirements for construction waste
  - Codify requirements for reduction of office/residential/commercial waste
  - Explore emerging opportunities and technologies in waste management

Goal 5: Create a Resilient Downtown Davis

- **Goal 5.1:** Develop comprehensive Downtown Resiliency Plan

  Implementation Steps:

  - Emphasize telecommunications, electricity and microgrid infrastructure, provide downtown cooling centers
  - Coordinate with hazard plan for downtown as neighborhood and commercial district with vulnerability assessment
- **Goal 5.2:** Recommend creation of an Economic Development Plan for Downtown Davis for inclusion, study or implementation within a strategy for downtown following completion of Specific Plan. The City's economic development plan is from the 1990s and needs an update. The economic development plan is an opportunity to build sustainability programming into Davis' financial future with business owners and developers. Such a plan could consider:

  Implementation Steps:

  - Promote innovation hubs.
  - Create a task force to explore suitability of sustainable food as branding for Davis' economic development/growth plan. Many cities already have such plans to tie farmland preservation efforts together with food festivals/events, edible landscapes, food incubators and food security.
    - May also wish to explore Zero Food Waste goals (e.g. limit polystyrene containers; connect organic food waste with collection and processing by UC Davis biodigester)

- Davis could consider setting aside city funds to support branding of food entrepreneurship (e.g. Woodland Food Front)
- Consider limiting franchise development to certain percentage of downtown businesses (e.g. Arcata)
- Creation of procurement plans for all municipal contracts (e.g. credit unions, local food, energy) to support regional/local economy and green businesses

Goal 5.3: Recommend active development of downtown identity/themes, including innovation, sustainability, agricultural context, food destination and other community values ♫ ☼