2 Nishi Gateway Project Overview

This chapter provides an overview of the Nishi Gateway project, including a summary of the proposed land uses and site plan prepared for development of the Nishi property; potential changes in land use and zoning within the West Olive Drive subarea; and goals, objectives, implementing actions, and performance indicators that pertain to land use and overall sustainability goals for the project.

As stated in Chapter 1, Introduction, sustainable development is the goal for the Nishi Gateway project. Section 2.3 articulates this goal more specifically for the Nishi development, along with objectives, implementing actions and performance standards that relate to cross-cutting aspects of the overall development (e.g., greenhouse gas [GHG] emission reduction and climate adaptation), which are addressed in more detail in subsequent chapters.

2.1 Nishi Property

The Nishi property is approximately 46.9 acres in size and is located outside the city limits in incorporated Yolo County but within the Davis Sphere-of-Influence. It is bounded by the Union Pacific Railroad (UPRR) to the west, which separates the site from the University of California Davis (UC Davis) campus; the historic Putah Creek channel and greenway corridor to the north; and Interstate 80 (I-80) to the east and south. The name "Nishi' originates from the Nishi family who owned and farmed the land for nearly 50 years.

The current owner and project applicant, Nishi Gateway LLC, purchased the Nishi property in 2005 and has submitted an application for development of the property as a mixed-use project. As noted in Chapter 1 and detailed further in this chapter, planning for this project has commenced in a collaborative fashion between the City, project applicant, Yolo County, and UC Davis. The essential concept for development on the Nishi property is to serve as the hub of a new mixed-use innovation district that takes advantage of the site's close proximity to both downtown Davis and UC Davis, major rail and freeway corridors, unique adjacent open space features along the creek corridor both on- and off-site, and its position and potential to be a new high-visibility "gateway" to the city.

View of new central spine street and residential uses, looking north.

2.1.1 Land Use Summary

An illustrative draft land use and site plan depicting the location of the proposed land uses, along with proposed roadways and connections to adjacent areas, is shown in Figure 2-1. Future development will be required to be consistent with the land use program (number of units, square footage, etc.) but will have some flexibility in how specific buildings and exterior spaces on each block are designed in terms of orientation, floorplates, building footprints, etc.

The proposed land use program for the development of the Nishi property includes a mix of rental and for-sale high-density residential uses; research and development (R&D) space; accessory commercial/retail space; on-site stormwater detention; parks and open spaces, including public parks, greenbelts, and private open space for the proposed residential uses; and a combination of surface and structured parking (Table 2-1). The land use program includes up to 650 residential units (440 rental and 210 for-sale units), up to 325,000 square feet (sf) of R&D uses, and up to 20,000 sf of accessory retail uses within residential or R&D buildings (i.e., coffee shop, small café/restaurant, etc.).

Figure 2-1 Draft Site Plan

Table 2-1 Nishi Development Land Use and Site Program Summary

Land Use Type	Acreage	Total Units	Density	Bicycle Parking Spaces	Vehicle Parking Spaces
Residential: Multi-family Rental[1]	6.2	440 units	65-82 du/acre	880	792
Residential: Multi-family For Sale[1]	3.6	210 units	60 du/acre	420	315
Research and Development (R&D)	5.0	325,000 sf	0.75-1.8 FAR	650	818
Surface Parking[2]	5.9	-	-	-	-
Retail[3]	-	20,000 sf	-	-	-
Roads	3.0	-	-	-	-
Open Space and Public Parks[4]	19.2	-	-	-	-
Stormwater Detention	4.0	-	-	-	-
Total[5]	**46.9**	**650 residential units 325,000 sf R&D 20,000 sf retail**	**-**	**1,950**	**1,925**

Notes: FAR = floor area ratio; du = dwelling units; du/acre = dwelling units per acre; sf = square feet.

[1] Residential acreage includes 3.9 acres of privately-maintained courtyard park areas.

[2] Surface Parking includes a large parking lot along the northwestern edge of the site, small lots south of the southerly rental housing, and smaller lots east of R&D uses along I-80, partially within an existing utility easement.

[3] Retail uses to be located within proposed Residential or R&D buildings, and thus separate parking is not assumed to be required.

[4] Includes approximately 15.9 acres for new public parks and dedicated open space/greenbelt, and approximately 3.3 acres of the existing Putah Creek Greenway which traverses the north portion of the site. See Chapter 6, Figure 6-1 for a more detailed Open Space and Parks plan.

[5] While not proposed at this time, the site could potentially accommodate an extended-stay hotel, which would be subject to subsequent market assessment and discretionary City review and approval with performance standards. Any goals, objectives or implementing actions contained in this plan would apply to subsequent changes in use. Source: Appendix E (MIG 2015, Ascent Environmental 2015)

2.1.2 Residential

As shown in Table 2-1, the plan includes up to 650 multi-family residential units on 9.8 acres, including approximately 210 for-sale condominium units on 3.6 acres, and 440 rental units with up to 1,500 beds[1] on 6.2 acres. Based on the proposed bed count within the rental units and assuming a 2.0 persons-per-household factor for each for-sale residential unit, the estimated on-site residential population will be 1,920 people.

The current concept depicted in Figure 2-1 shows the for-sale units located in two structures up to five stories on top of ground-level parking located in the northern portion of the site. As noted previously, the detail on the site plan is intended to provide illustrative examples for how the development program can be carried out, and does not reflect any proposed architectural designs.

[1] A bed count is used in recognition that rental housing will be attractive to students, and beds better reflect expected use than the number of units.

The proposed rental units are located immediately to the southwest of the for-sale units, across the UPRR right-of-way from the existing Solano Park (UC Davis) housing development. Each rental unit structure includes up to five stories of residential units with ground-level parking and potential accessory retail space. The estimated building height of the residential structures (rental and for-sale) is approximately 70-75 feet. Similar to the for-sale structures, these are conceptual in nature and reflect the general location and development footprint needed to accommodate the planned number of units. Rooftop patios and additional private greenspace (including courtyards) are also provided within the building footprint of each residential structure.

All proposed housing products (rental and for-sale) can serve as workforce housing in support of on-site or campus-related employment opportunities, with a corresponding range of unit sizes for varying household sizes, incomes, and lifestyles. The rental units will likely serve as student housing because of proximity to campus, and it has been assumed that 85 percent of the rental units will be occupied by students.

2.1.3 Research & Development

Employment-generating R&D uses include approximately 325,000 sf in a series of commercial buildings on approximately 5.0 acres, not including the adjacent surface parking lots. Per the conceptual site plan, these uses are located in four buildings within the eastern and southern portions of the Nishi site, closest to I-80. The largest of these structures includes a parking structure, with up to four levels with capacity for 845 vehicles. As currently proposed, the R&D uses will be located in buildings that will be approximately two to three stories (~30-45 feet) in height.

Proposed R&D buildings will be complementary to UC Davis research facilities, and can serve as incubator space for local start-ups, technology-related, or other R&D-related businesses. Within the planned 325,000 sf of office/R&D uses, the following use types are allowed:

- high-technology offices (e.g., small incubation spaces, mid-size offices, corporate headquarters);
- flexible spaces (large floorplate buildings to house large research equipment);
- research laboratories;
- support service offices (e.g., paralegal services, financial investor offices); and
- professional and administrative offices.

2.1.4 Accessory Retail

With respect to the accessory retail and related commercial uses (up to 20,000 sf) proposed within the Nishi property, these proposed uses are intended to provide supporting retail/restaurant/service opportunities that primarily serve the day-to-day needs of on-site

residents and employees, rather than destinations that compete with downtown Davis businesses. These uses may include, but are not limited to:

- smaller restaurants, cafes, bakeries (including indoor and outdoor seating areas);
- neighborhood-serving or employee-oriented retail and service establishments (i.e., printing and copying shops, drycleaners, bicycle sales and repair, beauty salons); and
- daycare, nursery school, fitness studios, or other appropriate supporting uses.

As currently proposed, these uses will be located within the bottom floor of the multi-family residential structures to be located on-site and described above.

2.1.5 Open Space and Parks

Proposed open space and parks within the Nishi property includes 19.2 acres of parks and greenways, consisting of natural open space and drainage areas along the Putah Creek corridor, which runs between the Nishi property and the West Olive Drive subarea; community pedestrian and bicycle trails and facilities; and landscaped parks, plazas and public gathering spaces. Stormwater management features, such as swales or other pervious areas could serve a dual purpose of reducing off-site stormwater flows with some potential recreational/open space benefits (see Figure 2-1). Additionally, as noted above, some additional private open space is provided along the rooftops of the proposed structures for on-site residents/employees. Private parks and open spaces are incorporated into the building developments themselves, and includes large green courtyards (to be located at-grade or above ground-level podium parking), rooftop vertical aeroponic farming, and community gardens, as well as open plazas for employees in the R&D buildings. The overall area dedicated for open space and public parks within the Nishi property (excluding private parks, courtyards or rooftop gardens and the stormwater detention basin) represents approximately 41 percent of the total land area on the Nishi property.

No commercial or residential structures will be located within 150 feet of the centerline of Putah Creek. Within the proposed buffer distance, native landscaping, trails, and vehicular access via the extension of West Olive Drive will be provided. On-site vegetation and trees will be preserved to the extent feasible, including best management practices employed to specifically protect the large oak tree that is approximately 89 feet in height and has a 69-inch diameter trunk. This tree is located within the primary proposed park area in the northwestern portion of the site.

For a more detailed discussion of open space and park uses, along with key features and implementing actions for sustainability, see Chapter 6, “Open Space and Parks.”

2.1.6 Roadways and Circulation

The proposed circulation system for the Nishi property consists of new local streets, along with a system of pedestrian and bicycle "greenways" that connect the site with the West Olive Drive subarea to the northeast and the UC Davis campus to the west. This system provides enhanced connectivity for pedestrians, bicyclists, transit riders, and automobiles via new multi-modal roadway connections and linkages to existing greenways along the historic Putah Creek corridor.

A central street on the Nishi property forms the backbone of the circulation system, which will connect with Old Davis Road and the UC Davis campus via a new grade separated crossing of the UPRR line, as well as an extension of West Olive Drive that connects to the West Olive Drive subarea via a new bridge over the historic Putah Creek channel. The preferred project reflects the connection to the UC Davis campus, which would be at discretion of the UC Regents. The City is also considering a scenario with vehicular access from Olive Drive only.

Additional details with respect to the transportation-related components of this plan are found in Chapter 3, "Transportation," as well as in Chapter 6, "Open Space and Parks."

Proposed multi-use pathways connecting to the existing Putah Creek Greenway and West Olive Drive, looking northeast.

Proposed undercrossing connecting the Nishi development to the UC Davis campus, looking west.

2.1.7 Parking

Approximately 1,925 vehicle parking spaces and 1,950 bicycle spaces are provided for residential and R&D uses on the site, as shown in Table 2-1. Residential bicycle and vehicle parking are provided at a rate of two bicycle spaces per dwelling unit, and one and half vehicle spaces per dwelling unit. Nonresidential parking is provided at a rate of two bicycle spaces per 1,000 square feet, and two and half vehicle spaces per 1,000 square feet.

Vehicle parking for the for-sale residential buildings is included in on-site podium parking within the buildings themselves. Vehicle parking for rental residential buildings may be located in a combination of on-site podium parking within the buildings, surface parking lots behind the buildings, or in the parking garage located in the central R&D building. R&D parking may be accommodated through on-site surface parking, in lots directly east of proposed buildings adjacent to the I-80 buffer or within a central parking structure. Construction of parking, especially of the parking structure, is likely to be phased. A goal of the transportation demand management (TDM) program is to reduce parking demand and therefor the need for parking structure spaces (see Chapter 3, Transportation).

Surface parking lots present an opportunity to incorporate a number of sustainable design elements, including shade canopies that can also accommodate solar PV panels, which will help to off-set project energy demands and reduce the urban heat island effect; as well as bio-swales and other LID features to manage stormwater on site, which also contributes to reduction of the urban heat island

effect. See other chapters for implementing actions related to these elements. Parking needs will be balanced with the sustainability goals and objectives identified for the project, including the transportation demand management measures within Chapter 3.

2.1.8 Water, Sewer and Drainage Infrastructure

Infrastructure will be extended from nearby utilities to serve the site with public water and wastewater collection service. Stormwater will be managed through a combination of low-impact development features (e.g., bio-swales or other features) and an approximately 4.0-acre detention basin at the southern end of the site, with flows directed towards Putah Creek through an existing drainage ditch. More information on conceptual plans and sustainability strategies water, wastewater, and stormwater is found within Chapter 5.

2.2 West Olive Drive

The West Olive Drive subarea consists of 10.8acres located south of Richards Boulevard, east of the UPRR right of way, north of the historic Putah Creek Channel, and west of I-80. This area is currently designated as Commercial Service and zoned for Commercial Service and Parks/Recreation uses under the Gateway/Olive Drive Specific Plan, which was adopted by the City of Davis in 1996 and amended in 2002.

Concurrently with approval of the Nishi Gateway project, properties in the West Olive Drive subarea will be re-designated as Neighborhood Mixed Use and rezoned to the City zoning designation of Planned Development (P-D). This plan anticipates that approximately 55,000 net new square feet of commercial uses may occur within West Olive Drive through redevelopment interest and may include office, commercial service, residential mixed-use, and small-scale neighborhood-serving uses. Based on allowable floor-area ratios (FAR), structures can be two or three stories in height.

2.3 Entitlements and Subsequent Actions

The following entitlements/public approvals will be required as part of project implementation for the Nishi property:

1. General Plan Amendment to redesignate the Nishi property from Agriculture to a Mixed Use Innovation District land use designation;

2. Prezoning from County Agriculture-Intensive (A-N) to City Planned Development (P-D);

3. Preliminary Planned Development (PPD) approval (Zoning Code, §40.22.010);

4. Site Plan and Architectural Review to approve project Design Guidelines and Performance Standards;

5. Development Agreement for the Nishi property to provide certainty and mutual assurances to the City and the project applicant (Government Code, §65864 et seq.); and

6. Action by the City Council to call for an election and set the baseline features of the project, per the process identified through Measure R[2]. If the City Council approves the project and places the project on the ballot for voter approval, then the public will be asked to vote on the project.

Additionally, the City of Davis is pursuing the following entitlements/public approvals for West Olive Drive:

1. General Plan Amendment to redesignate West Olive Drive from Commercial Service to the City of Davis' existing Neighborhood Mixed Use land use designation, and

2. Rezoning and PPD from Gateway / Olive Drive Commercial Service to City Planned Development (P-D) for a mix of uses.

Yolo County LAFCo must also approve the annexation of the Nishi property into the City. Upon annexation, the property will receive a new Mixed Use Innovation District land use designation, which will be developed as part of the continued planning of the project. According to California Government Code 56375, LAFCo requires, as a condition of annexation, that a city prezone the territory to be annexed. Consistent with this requirement, the Nishi property will be prezoned to the City zoning designation of Planned Development (P-D), which allows for project-specific regulations to enable a diverse mix of uses that promote the project vision, goals, and policies.

2.4 Goals and Objectives

The following sustainability goals and objectives are a subset of those identified for the project in Chapter 1. These goals and objectives are related specifically to the proposed land uses and siting of these land uses within the Nishi development along with other aspects of the development as a whole (e.g., reducing GHG emissions and climate-resiliency). Other sustainability goals and objectives identified in Chapter 1 may also be applicable to elements of land use and site design; however, they are addressed in other chapters of this plan.

- **Goal 1:** Serve as a model for low-carbon, climate-resilient development that also enhances the fiscal and equitable sustainability of the broader community.

[2] Measure R is a renewal of Measure J, enacted in 2000 to require voter approval for any newly proposed urban or residential development on agricultural land at the time of proposal.

- **Objective 1.1:** Achieve substantially lower GHG emissions per capita for both residents and employees of the District compared to baseline levels, in support of the City of Davis' and UC Davis' long-term goals to achieve carbon neutrality.
- **Objective 1.2:** Encourage innovative site and building design that encourages a healthy and interconnected natural and built environment, conserves natural resources, and promotes equitable and efficient communities.
- **Objective 1.3:** Contribute to resource conservation during construction through the use of sustainable materials and cost-effective resource conservation methods.
- **Objective 1.4:** Promote and demonstrate resiliency to the effects of climate change and other challenges through project design.

- **Goal 5:** Create synergy with other project design goals and existing community sustainability initiatives.
  - **Objective 5.1:** Preserve and promote the health of future residents and employees and the local ecosystem.
  - **Objective 5.4:** Identify sustainable architectural and site design options for new buildings and infrastructure on the Nishi property that will enhance and establish synergy with new development in the UC Davis campus.
  - **Objective 5.5:** Reduce landfilled waste by maximizing on-site opportunities for waste reduction, reuse and recycling.
  - **Objective 5.6:** Incorporate opportunities to educate and empower future residents and employees to increase awareness of resource consumption and their carbon footprint.
  - **Objective 5.7:** Provide housing and employment-serving land uses that will positively contribute to the region's jobs-housing balance.

2.5 Implementing Actions

The implementing actions in this chapter ensure that the proposed land uses and site design aspects shown on the Site Plan (Figure 2-1) will be achieved in an orderly and consistent manner. Additionally, actions are identified for broad sustainability topics that are more general in nature, along with features or strategies that cut across the topical areas contained in various chapters in this implementation plan (e.g., GHG emissions reductions, education and engagement, etc.).

2.5.1 General Land Use

Action 2.1: Zoning

Create a project-specific zoning code (e.g., Mixed Use Innovation District) that specifies permitted uses and development standards within both the Nishi development and properties located in the West Olive Drive subarea.

Action 2.2: Design Guidelines

Design guidelines shall be developed specifically for the Nishi development to ensure that architectural and urban design for buildings and public spaces within the site contribute to the project's goals objectives for sustainability. At minimum, the design guidelines will address the following sustainability components:

- preferred plants for low- or no-water use,
- guidance on edible landscaping and community gardens,
- irrigation and LID design standards,
- designing for solar access and passive heating & cooling,
- outdoor lighting,
- composting, recycling and waste collection, and
- streetscape and bicycle/pedestrian path design.

2.5.2 Engagement/Education

It will be important to both educate and engage new residents and employees within the Nishi development to develop ownership and understanding of the many sustainable design elements and programming requirements included at the site. This is necessary to ensure the long term effectiveness of the overarching project goals to become a leading sustainable innovation district model for California and the nation.

Education and engagement of the broader community is also a desired outcome as part of this project, and as such community participation and dialogue should be considered as part of any programs.

Action 2.3: Community Education and Engagement Program

Develop and implement a coordinated community engagement plan to define the role of future community residents and employees for achieving sustainability objectives, in partnership with the City of Davis. Explore opportunities to create partnerships with Cool Davis or other local community-based organizations that will leverage existing community momentum towards achieving sustainability.

This action incorporates all sustainability aspects including social, environmental and financial. The following are some ideas that can be included in such an engagement plan:

- Educate residents, employees, and visitors on project goals and provide visual feedback on how the project is currently tracking with these goals. This may range from informational signage or displays throughout the community, to smart phone apps and feedback displays in apartments, tenant spaces, R&D buildings and common areas that provide real-time consumption data and trends for water, energy, bike vs car trips, air quality, etc. An interactive community sculpture, providing real-time community energy use data and performance over time can also be considered.

- Encourage residents and commercial tenants to invest in energy efficiency devices and practices. Seminars can be developed to introduce these ideas both to the residents and commercial tenants. These should be conducted regularly to accommodate turnover. A "train-the-trainer" program can similarly be implemented with residents and commercial tenants organizing the seminars.

- At the multi-family buildings, consider competitions to award (or reward) the lowest energy consumers over a fixed period of time. Providing users with real-time energy consumption tools is critical to engage and empower users to reduce energy use.

- Provide energy use benchmarks and targets for commercial building tenants and owners. Require commercial building owners to report building annual energy use on a regular basis. Using the California Building Energy Reference Tool[3], compare building energy use with projected estimates and other buildings in the community to determine if buildings are performing to specifications and provide feedback to tenants and building owners.

- Provide interpretive signage and other elements that can help educate people about the sustainability aspects of the development, including low-impact development techniques, low- or no-water use landscaping, alternative vehicle parking, and other measures.,

Action 2.4: Commissioning and Facility Management and Maintenance Training

Prepare and implement a training program and manual for all facility managers and staff, to maximize the sustainable design features and systems included. This program can include requirements for seasonal watering schedule for all irrigation controllers and other irrigation components adjacent to the irrigation controller, proper use and monitoring of energy management system data (see Action 4.14 in Chapter 4), and other related facility operations and routine maintenance requirements.

[3] http://poet.lbl.gov/cal-arch/start.html

This action should be implemented in close coordination with commissioning already required by CALGreen and other CA Title 24 building code requirements, to ensure that proper system design and implementation is coordinated with ongoing education and training needs.

2.5.3 Waste Reduction and Recycling

Among the stated objectives is to reduce landfilled waste by maximizing on-site opportunities for waste reduction, reuse and recycling. The City of Davis has adopted a goal to reduce waste disposal to 1.9 pounds per person per day by 2020, and to be as close to zero pounds of solid waste per person per day as possible by 2025[4]. Similarly, UC Davis has adopted a goal to have zero waste by 2020[5]. As part of the City of Davis, the Nishi development will be subject to the same policies and regulations as apply to any other area within Davis. These include the following:

- The City's Construction and Demolition Ordinance requires that at least 50 percent of construction debris be diverted from the landfill;
- CalGreen Tier 1 requires that 65 percent of construction debris be diverted and at least 10 percent post-consumer or pre-consumer recycled content be used as materials in the project; and
- The City's Municipal Code (Chapter 32) mandates that multi-family developments provide adequate area for recyclables. The City is working on additional initiatives[4] to ensure that the community can meet the goal of zero waste by 2025.

Several implementing actions in subsequent chapters of this plan will help contribute to meeting the community's zero-waste goals and targets. For example, Chapter 6 contains Actions 6.30 (Mulching) and 6.38 (Compost, On-site Waste, and Waste to Energy Options), which will help reduce hauling green waste or food waste off-site, allow for recycling and composting of these waste stream components on-site as compost and mulch in on-site gardens and landscaping, and provide potential feedstock supplements for waste-to-energy facilities in the region.

2.5.4 Jobs/Housing Balance

As noted above, a key objective is to provide housing and employment-serving land uses that will positively contribute to the region's jobs-housing balance. In the long-term, the Nishi development can generate 1,508 new jobs as a result of the additional R&D and retail space.

[4] City of Davis. 2013 (July). *Davis Integrated Waste Management Plan*. Available: http://recycling.cityofdavis.org/2013-integrated-waste-management-plan. Accessed July 8, 2015.

[5] UC Davis. 2015. *Campus Progress: Waste*. Available: http://sustainability.ucdavis.edu/progress/waste_reduction/. Accessed July 8, 2015.

The most recent jobs-housing ratio calculated for the city of Davis as a whole was 0.7:1.0[6], indicating that more housing is available in the city than jobs. As a consequence, many residents are unable to work in the city and must commute. The jobs-housing ratio of the Nishi development is 2.3:1.0, which will improve the overall jobs-housing balance for the city by providing more job opportunities for residents living in the city. At the same time, the development will provide housing to meet the needs of UC Davis students as well as employees of UC Davis and other local businesses.

2.5.5 Public Health

Objective 5.1 above promotes healthy living and choices for future residents and employees. This plan addresses this objective through a variety of sustainable design elements and implementing actions in various chapters to emphasize human-powered transportation choices, provide space for food to be grown on-site, reduce adverse effects of air pollution and the urban heat island effect through extensive tree and plantings, and include parks and open space throughout the site to enhance recreational opportunities and promote active lifestyles.

The following action also contributes to achieving the project's public health objectives by addressing the use of tobacco and other products, which can be harmful to public health.

Action 2.5: 'Smoke Free Zone'

To the extent legally permissible, require the Nishi development to be a "smoke free zone" by prohibiting smoking in both public and private spaces.

2.6 Evaluation and Monitoring

2.6.1 GHG Emissions Evaluation

As stated in the goals and objectives above, this plan has been developed with the intention of creating a low-carbon, sustainable, and innovative development project. By virtue of the Nishi property's proximity to downtown Davis and the UC Davis campus, the Nishi development already achieves location efficiency and is more likely to result in increased walking, biking, transit usage, and shorter vehicle trip lengths, all of which contribute to lower vehicle miles traveled (VMT) and associated GHG emissions from motor vehicles. The City of Davis also currently requires compliance with CALGreen Tier 1 standards, which are more stringent than minimum CALGreen green building standards required in California.

[6] City of Davis. 2010 (February 26). *Analysis of the Value of Economic Development and Potential Employment Growth in the City of Davis*. Available: http://city-council.cityofdavis.org/Media/CityCouncil/Documents/PDF/CityCouncil/Innovation-Park-Task-Force-Committee/Documents/CSER-Report.pdf. Accessed: April 1, 2015.

Many of the implementing actions in this Sustainability Implementation Plan contribute towards achieving even more substantial reductions in GHG emissions, compared to what is typically required of development projects in Davis. Throughout the subsequent chapters of this plan, various goals, objectives and implementing actions are noted that will contribute towards achieving GHG emissions reductions by reducing vehicle trips and VMT beyond what is achieved solely through location efficiency, by further reducing energy consumption and improving efficiency in buildings and site infrastructure beyond CALGreen Tier 1 requirements, by generating substantial amounts of renewable energy on-site and/or off-site (which, combined with high energy efficiency standards will help the project work towards achieving zero net energy [ZNE] by full buildout), by increasing water and wastewater efficiency beyond CALGreen Tier 1 requirements, and other strategies.

To quantitatively evaluate the Nishi development's achievements, annual GHG emissions were estimated for on-site building energy use, transportation, water use, and other on-site activities, based on two project buildout scenarios:

1. A "business-as-usual" (BAU) project buildout scenario in which none of the sustainability actions in this Plan are implemented; and

2. A "Sustainability Implementation Plan" (SIP) scenario in which all of the feasible actions in this plan are implemented.

As shown in Table 2-2 below, a comparison of these two scenarios shows that GHG emission reductions associated with the implementing actions in the SIP will be approximately 23 percent, compared to the BAU buildout scenario (excluding the application of reductions associated with solar PV energy generation). When GHG emission reduction credits from on-site solar PV energy generation potential are factored in, GHG emissions reductions from the SIP are around 31 percent compared to BAU.

Another helpful metric is GHG emissions per service population. The term "service population" refers to both residents and employees who generate GHG emissions related to the project. Comparing GHG emissions per service population is a way to normalize all emissions by the total persons associated with generation of those emissions (versus per capita, which only captures residents and does not take employees into account). For the Nishi property, the total residential population is estimated to be 1,920 at buildout, and employment is estimated to be 1,508 at buildout. Thus, the combined service population will be approximately 3,428 at buildout. Comparing the BAU scenario to the SIP scenario, annual post-buildout GHG emissions per service population can potentially reach 3.01 metric tons of carbon dioxide equivalent ($MTCO_2e$), or 34 percent below BAU levels, consistent with Objective 1.1.

In addition to the estimated GHG emissions reductions associated with the SIP scenario at project buildout, ongoing reductions will be needed beyond the estimated buildout horizon year of 2022 to contribute to longer-term GHG emissions reduction goals for the city as a whole established by

the Davis Climate Action and Adaptation Plan (i.e., carbon neutrality by the year 2050). Many of these reductions will come from ongoing improvements in vehicle technology and fuel economy standards, reductions in fuel carbon intensity, and other actions that are under State or federal authority. Policy changes and technological advancement are likely to continue, and innovative strategies will likely continue to emerge that will contribute to further reductions in this project's GHG emissions, but which cannot be predicted with certainty at this time.

Table 2-2 Annual GHG Emissions Scenarios for the Nishi Development (2022 Buildout Year)

Emissions Source	$MTCO_2e$/ Year		Net GHG Reductions from SIP ($MTCO_2e$/Year)
	Business-As-Usual (BAU) Buildout Scenario[1]	Sustainability Implementation Plan (SIP) Buildout Scenario[2]	
Electricity[3]	2,398	1,589	809
Natural Gas[3]	1,956	1,404	552
Solid Waste	415	415	0
Water-Related Electricity Use (includes wastewater)	39	28	11
Transportation[4]	10,933	8,746	2,187
Other (e.g., Landscaping and amortized lost sequestration[5])	13	13	0
TOTAL GHG emission (all sources)	**15,754**	**12,195**	**3,559**
Solar Energy Generation (Proposed)[6]	0	-1,385	1,385
Solar Energy Generation (Maximum)[6]	0	-1,876	1,876
TOTAL GHG emissions with Proposed Solar Energy	**15,754**	**10,810**	**4,944**
TOTAL GHG emissions with Maximum Solar Energy	**15,754**	**10,319**	**5,435**
TOTAL GHG emissions per service population[7]	**4.60**	**3.56**	-
With Proposed Solar Energy	**4.60**	**3.15**	-
With Maximum Solar Energy	**4.60**	**3.01**	-

Notes: GHG = greenhouse gas, $MTCO_2e$ = metric tons of carbon dioxide equivalent. BAU = business as usual scenario, SIP = Nishi Gateway Sustainability Implementation Plan scenario.

[1] "Business-as-usual" (BAU) means that the project will be built to minimum requirements of CALGreen Tier 1 and other existing minimum standards required by the City that may contribute towards achieving sustainability.

[2] For the Sustainability Implementation Plan Scenario, only those actions that result in VMT reductions, energy savings, or water savings above and beyond CALGreen Tier 1 requirements or other existing minimum requirements were applied to GHG emissions calculations. Some of the sustainability actions call for compliance with CALGreen Tier 1 (BAU); however, in that case, no GHG emissions reductions were applied.

[3] GHG emissions associated with electricity use are based on meeting basic 2013 Title 24 Energy Code requirements for BAU scenario, and 30% better than 2013 Title 24 in the SIP scenario. Both do not include any emission reductions benefits from on-site solar PV, and any electricity use associated with EVs is accounted for in the Transportation sector.

[4] Transportation GHG emissions are based on on-road mobile source emissions, including both fossil fuel and electric vehicles. Reductions in VMT associated with the TDM program and actions in Chapter 3 were used to calculate changes in VMT from BAU.

[5] Accounts for removal of 46.9 acres of cropland and an addition of 6.5 20 new trees and one-time loss in emissions is amortized over the anticipated life of the project, assumed to be 40 years.

[6] Solar PV energy generation will vary depending on the level of solar PV actually installed, as stated in the Energy chapter. The amount of on-site solar PV noted in the main proposed actions are stated separately from additional on-site PV options that will be considered the "maximum feasible" (Section 4.3.1), to avoid potential conflicts with other project goals and objectives.

[7] The term "service population" refers to both residents and employees who generate GHG emissions related to the project. GHG emissions per service population is a way to normalize all emissions by the total persons associated with generation of those emissions

Table 2-2 Annual GHG Emissions Scenarios for the Nishi Development (2022 Buildout Year)

(vs. per capita, which only captures residents and does not take employees into account). For the Nishi site, the total residential population is estimated to be 1,920 at buildout, and employment is estimated to be 1,508 at buildout. Thus, service population will be approximately 3,428 at buildout.

2.6.2 Monitoring

Action 2.6: Project Implementation and Monitoring Program

City staff should coordinate and monitor all implementation actions and monitoring activities identified in all chapters of this plan to ensure that actions are implemented to achieve project goals and objectives.

Action 2.7: Sustainability Tracking Tool

As part of the project implementation monitoring program noted in Action 2.6, develop and use a tracking and monitoring tool to measure sustainability metrics identified throughout this plan, such as annual GHG emissions, gallons of water used per capita, energy used per capita, etc.

Table 2-3 below identifies various measures and metrics the City of Davis can use to ensure that the Nishi Gateway project achieves GHG emissions reductions goals and objectives. See the Evaluation and Monitoring sections in subsequent chapters of this plan for additional metrics that address related or more specific sustainability objectives.

Table 2-3 Performance Metrics

Topic	Measure/Metric	Timing	Desired Outcome
Total GHG Emissions	Metric tons of carbon dioxide equivalent [$MTCO_2e$])	Every 5 years, post-buildout	10,810 $MTCO_2e$ or less per year
GHG emissions intensity	Metric tons of carbon dioxide equivalent [$MTCO_2e$]) per service population (residents and employees)	Every 5 years, post-buildout	3.15 $MTCO_2e$ per service population or less per year
Jobs/Housing Balance	Ratio of total jobs to total dwelling units	Every 5 years, post-buildout	2.3:1.0