DAVIS Nishi Gateway

NISHI DEVELOPMENT PROJECT DESIGN GUIDELINES

Prepared by MIG | December 2, 2015 | **REVISED ADMINISTRATIVE DRAFT**

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Introduction

This document includes detailed design guidelines for all public and private development activities on the Nishi Gateway site. It provides specific guidance and standards that will be met as project elements are further refined and designed in the coming years. Specifically, the Design Guidelines are crafted to:

1. Provide the Nishi property owner(s) with a **clear understanding of the type and quality of development** the City of Davis desires and expects for this area;
2. Serve as a set of **guiding design principles** for public officials, the property owner(s), designers, City staff, and the Davis community to evaluate and direct project design;
3. Aid project designers in understanding the City's main **expectations for development** on the Nishi development project site; and
4. Assist City staff in the **design and construction of public improvements** necessary to support new development.

Purpose and Applicability

The purpose of the Design Guidelines is to ensure site improvements and new development on the Nishi property results in a **well defined, sustainable, beautiful and coherent environment** that promotes livability, enhances economic development, and supports the sustainable innovation district goals of the project.

These guidelines, **when used in conjunction with the Sustainability Implementation Plan (SIP) and Preliminary Planned Development Zoning Ordinance (PPD),** will guide and define the character of future public improvements and private development on the Nishi property. The allowed uses and development standards included in the SIP and PPD are considered prescriptive and more quantitative in nature, while the Design Guidelines contained in this document are generally more discretionary and qualitative.

City of Davis staff, the Planning Commission and the City Council will use these Design Guidelines to review specific development proposals on the Nishi Gateway site to ensure they are consistent with and implement the projects' vision and objectives, as presented in the SIP. Future development proposals, whether for individual buildings or collectively phased projects, must comply with these guidelines as well as the City of Davis General Plan and Municipal Code, where applicable. Should particular elements in these Design Guidelines conflict with other City development standards or regulations, these Design Guidelines shall prevail. Conversely, any particular element or provision not specifically covered in these Design Guidelines shall be subject to the provision of the Davis Municipal Code.

Document Organization

The Design Guidelines present descriptive text supported by maps, graphics and representative images to fully articulate concepts and requirements, organized into the following sections:

- Circulation and Mobility
- Open Space and Parks
- Signage and Amenities
- Buildings
- Sustainability and Energy Production
- Sustainable Plant Palette

Circulation and Mobility

Complete and Green Streets

Intent: Create and maintain "complete" public streets that enable safe, attractive and comfortable access and travel for users of all ages and abilities (including pedestrians, bicyclists, motorists and public transportation users) by reducing and slowing traffic, incorporating pedestrian amenities, and integrating bus transit. Simultaneously, create and maintain a streetscape system that captures stormwater runoff, filters pollutants, replenishes groundwater supplies, provides habitat for wildlife, and helps the Nishi development create a sustainable identity as an environmentally-friendly residential and innovation district.

1. Designate West Olive Drive (from Richards Boulevard through the Nishi property) and the new connection to UC Davis as "Complete Streets" to provide a balance between driving, parking, biking and walking interests for all users. These roadways shall emphasize and promote active, non-motorized transportation to the greatest extent feasible.

2. Construct the new West Olive Drive extension so it becomes a signature social, transportation and sustainability feature of the project. As shown in **Figure 1**, design the roadway to include the following:

    a. Maximum 11 foot travel lanes;

    b. Minimum eight foot parallel parking areas;

    c. Minimum seven foot wide green buffer and landscaping areas between street parking and sidewalks;

    d. Minimum 10 foot wide sidewalks on both sides of the roadway to support pedestrian mobility

    e. Minimum 14 foot wide multi use path connecting the Nishi Gateway site to UC Davis and the Putah Creek trail (see Multi-use Path subsection for detail on the bicycle/pedestrian path design feature); and

    f. Minimum seven foot wide landscaping on each side of the roadway that incorporates bioswale features to allow onsite stormwater retention.

3. Provide on-street parking on West Olive Drive to slow traffic and provide a buffer for pedestrians.

4. Install "bike sharrows" and bike racks along West Olive Drive in highly visible locations to provide safety and convenience.

5. Integrate bus stops within the right-of-way (in lieu of parking spaces) near the entrance of major buildings to provide convenient access for transit riders.

6. Provide pedestrian-friendly transit facilities (i.e., bus shelters, trash/recycling receptacles, and seating) at all public transit stops.

7. Create small pathway-connected parks with clear directional signage between bus stops and building entrances.

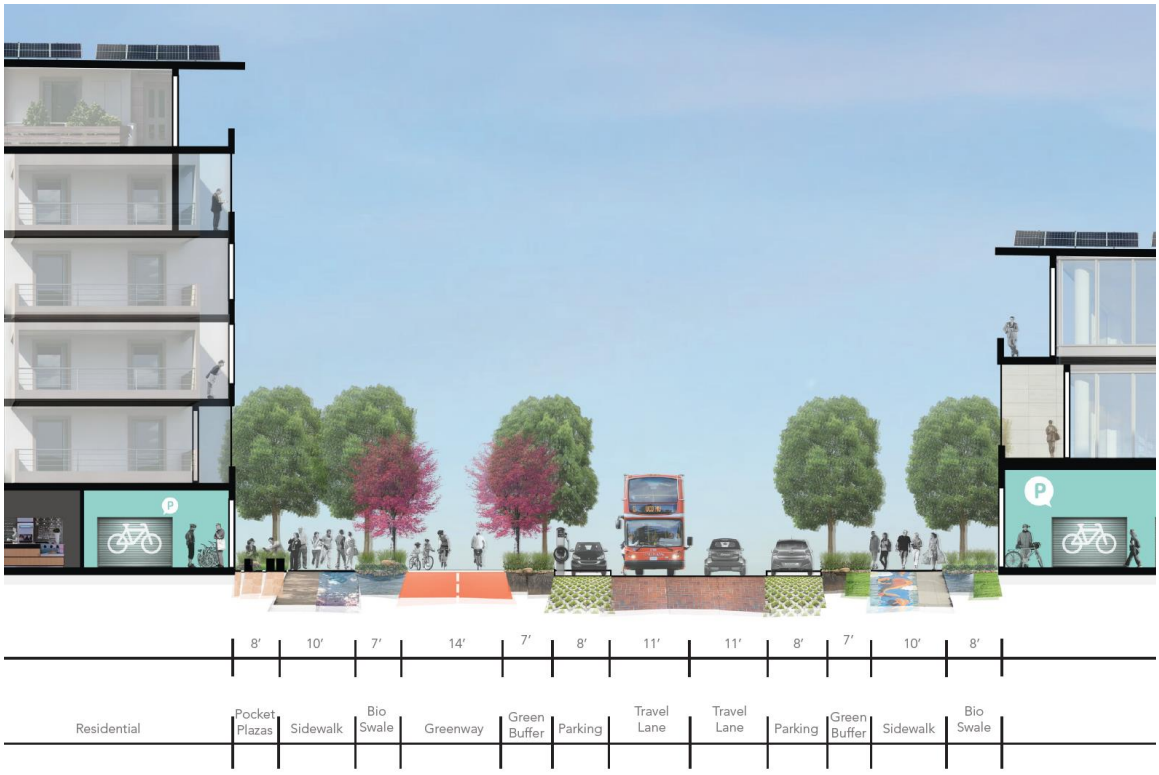
8. Plant trees along all roadways to help articulate the street edge and open spaces, provide pedestrians with a buffer from motorized traffic, and offer shade and wind protection along sidewalks and pathways.

9. Ensure street tree placement does not interfere with truck/bus circulation, obstruct pedestrian or bicycle circulation patterns, hinder visibility, or obscure signage.

10. Install landscaped bioswales located next to sidewalks, bulb-outs, public parks and plazas designed to low impact development (LID) best practices, incorporating trees when there is sufficient spacing.

11. Encourage the use of permeable paving materials or porous asphalt for sidewalks and parking lanes, in surface parking areas, and adjacent to tree wells to increase infiltration of stormwater runoff.

Figure 1



Multi-use Paths

Intent. Create a "Green Loop" multi-use path that celebrates Davis' long history as one of the most bicycle-friendly communities in the nation, including cutting-edge features for the path that promote the sustainability goals of the project. The Green Loop concept is envisioned as a separated Class I multi-use path and open space corridor that connects the Nishi project to the UC Davis Arboretum and the Putah Creek multi-use trail, providing efficient mobility through the site for building residents and workers as well as the larger Davis community.

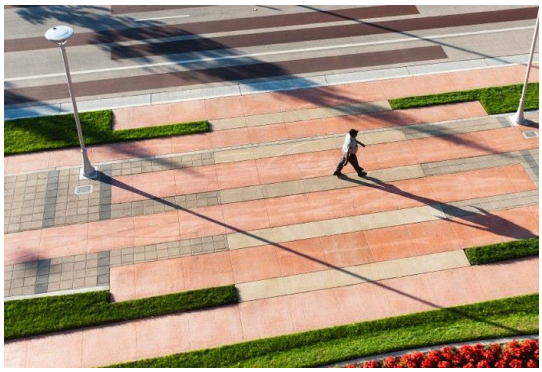
1. Design the multi-use path system as the primary means for bicycle circulation through the site.
2. Ensure that the alignment of the path provides clear, convenient and easily accessible routes for bicyclists traveling to, from, and through the site.
3. Limit the number of times the path crosses any major roadway on the site. In the event there is a crossing, ensure that there are adequate markings and stop signs for both motorists and bicyclists. For larger crossings, such as the crossing across the central spine road in the northern portion of the site, ensure there are warning lights installed so bicyclists and motorists can clearly and easily navigate the crossing.
4. Require the path to be a minimum of 14 feet wide with center markings to clearly delineate travel lanes.
5. Incorporate permeable pavement into the design of the path to further enhance on-site stormwater management.
6. Consider incorporating solar energy production and/or lighting features into the path.
7. Use clear signage to indicate direction of travel as well as acceptable modes of transportation (e.g. bicycle, foot, etc.).
8. Ensure the path is physically separated from all roadways by vegetation and a minimum 3.5-foot distance between the edge of roadways and the edge of the path.
9. Limit the amount of pedestrian traffic on the path by including sidewalks adjacent to all roadways and creating a separate perimeter running path constructed of decomposed granite.

Sidewalks, Crosswalks and Bulb-outs

Intent: Create a complete pedestrian circulation system that is safe and comfortable for all users, supports universal access, and increases the overall level of pedestrian connectivity and accessibility throughout the Nishi development.

1. Provide clearly marked crosswalks with a minimum width of 10 feet at all controlled intersections and at intersections of secondary streets through the use of special paving materials, colors/patterns, and/or crosswalk signage to heighten visibility and lend identity to the crossing.
2. Explore the use of special paving materials, colors, and/or patterns for crosswalks to heighten visibility and lend identity to the area while creating an attractive pedestrian environment.
3. Employ colored and "cool" temperature paving materials with high solar reflectance and high thermal emittance (high albedo) to reduce heat island effects.
4. Slow vehicular traffic through appropriate "complete streets" design features to encourage a comfortable interaction between people and automobiles.
5. Cross-walks, drop-off areas, and accent materials along pedestrian circulation routes should be employed to achieve the goal of lively and active pedestrian circulation.
6. Incorporate bulb-outs at intersections and at mid-block pedestrian crossings to improve safety and reduce roadway crossing distances.
7. Encourage the design of corner bulb-outs at intersections to function as pocket plazas with pedestrian amenities such as landscaping, art, seating, trash/recycling receptacles, and bicycle racks.
8. Ensure that all streets have continuous sidewalks with a minimum width of 10 feet.
9. Incorporate shade-providing trees and shrubs into stormwater bioswales to create a more comfortable pedestrian environment while ensuring they do not obstruct pedestrian circulation or visibility.
10. Ensure at least a 12-foot tree canopy clearance from the finished sidewalk elevation to provide clear emergency and service access, allow light penetration from pedestrian-scale street lights, and create visual connections between buildings, signage, the sidewalk and the roadway.
11. Ensure that all crosswalks have ramps and warning strips that comply with Americans with Disabilities Act (ADA) standards.
12. Ensure all pedestrian and multi-use paths provide access and usability to people of all abilities as required by the ADA.
13. Explore the use of protected intersections for bicycles as well as pedestrians.


STOP



Automobile Parking

Intent. Provide adequate surface and structured parking that is conveniently located, easy to navigate, and can provide joint use for solar energy production and/or vertical agriculture.

1. Promote the use of electric vehicles and other low-polluting vehicles by providing dedicated parking spaces equipped with electric vehicle (EV) charging stations for residents and employees. EV parking spaces with charging stations must meet or exceed CALGreen Tier 1 minimum requirements (five percent of total parking required for residential construction and four percent of total parking required for non-residential construction).

2. Consider providing gates at each parking facility access point to monitor trips and assign parking costs based on arrival and departure times. Electronic signs would be posted at each access point indicating the current fee that is being charged, and this information would be provided to employees, residents and visitors.

3. Incorporate pervious surfaces into all parking areas to allow for biofiltration and to reduce the amount of impervious surfaces on the site.

4. Layout parking efficiently to minimize the overall area of the lot on a per-parking-space basis.

5. When there are opportunities for shared and/or structured parking that minimizes site coverage, building footprint coverage should remain the same and a greater amount of space should be provided for parks and open spaces.

6. Design parking garages with high efficiency lighting and ventilation systems.

7. Provide solar photovoltaic (PV) shade structures over parking lots and parking garage rooftops, where allowable and appropriate. Tree shading in surface parking lots may also be appropriate; however, shade structures with solar PV should be a priority in order to maximize the project's renewable energy generation and zero net energy (ZNE) potential.

8. Incorporate a green wall on the backside of all parking and buildings structures facing either Interstate 80 or the Union Pacific railroad in order to provide a soft edge and to publicize the project's sustainability features. Depending upon the ultimate size of these structures, consider incorporating vertical agriculture (e.g., edible plants) into the designs of these walls.

9. Encourage parking structures to include internal cisterns to capture rainwater and reuse it for green wall irrigation.


ARKADEN
B GO 4017

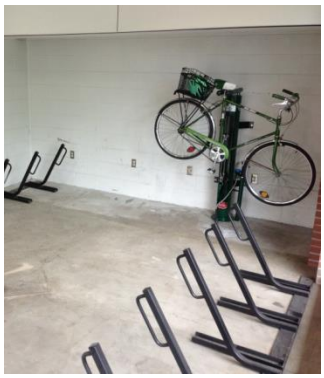
Bicycle Parking and Amenities

Intent. Promote the use of bicycles and active transportation as the primary mode of travel for residents, workers and visitors to the Nishi property by ensuring properly placed, sized and accessible bicycle parking and "end-of-trip" facilities.

1. Provide secure, lighted internal bicycle storage rooms of sufficient capacity to accommodate minimum required long-term bicycle parking spaces within each Residential building to provide ease-of-use to tenants riding their bikes as a primary means of transportation[1]. These rooms should be located on the ground floor so they can provide easy access to the multi-use trail. Depending upon the final programming for each Residential building, the internal bicycle storage should be comprised of large rooms (non-air-conditioned) with racks that allow easy and secure loading/unloading of bikes.
2. Internal bicycle storage should be easily accessible and navigable from the central Green Loop multi-use path, and be secure and safe for user.
3. Dedicate land and provide a minimum of two bike-share stations, one centrally located among the Residential buildings and one centrally located among the Research & Development buildings.
4. Provide a community bicycle repair facility, potentially co-located with a bike share station, end-of-use facilities, or bicycle parking area.
5. Provide end-of-trip facilities for Research & Development users, including showers, lockers and changing rooms, and internal bicycle storage.
6. Provide a convenient location for bicycle parking, bike share, and connecting facilities near transit stops, including on-street bike racks or lockers.
7. Incorporate "bike counters" to provide real time information on the number of cyclists moving through the site.

[1] See the City of Davis Municipal Code, Chapter 40 Zoning, Article 40.25A Bicycle Parking for specific bicycle parking standards. Available online at: http://qcode.us/codes/davis/.



CYCLISTS TODAY
CYCLISTS THIS YEAR
SFMTA

Open Space and Parks

Open Space and Natural Habitat

Intent: Provide locations for habitat preservation, carbon sequestration and air quality benefits (through new tree plantings), and for non-automotive circulation and passive recreation.

1. Protect open space areas as permanent, undeveloped green space that is managed for both its natural value and for recreational use (see **Figure 2**).

2. Include native, drought tolerant landscaping that requires minimal or no irrigation in areas dedicated as open space (see Sustainable Plant Palette).

3. Plant trees to improve aesthetics, shading, carbon sequestration, and air quality. However, trees must be horticulturally appropriate. Native and/or drought-tolerant species are strongly preferred.

4. Place renewable energy generation facilities (e.g., solar photovoltaic) within open space areas so long as they neither diminish habitat values, interfere with drainage, nor degrade the aesthetics of the area.

5. Include elements into park and open space areas like wind breaks, shade, drinking fountains or water bottle refilling stations, appropriate lighting, and movable furniture to ensure user comfort.

6. Develop at least two direct connections to the existing Putah Creek Greenway multi-use trail in order to provide sufficient access between the Nishi property and the citywide trail system. Two of these connections should be located on either side of the new West Olive Drive bridge/overpass to allow unimpeded access to either side of the road for pedestrians and bicyclists.

7. Create a series of interior neighborhood greenbelts that provide connection within and through the Nishi property. This includes development of the "Green Loop"[2] concept and additional neighborhood greenbelts adjacent to interior roads that provide access to open space areas on the exterior of the site for people and bioswales.

8. Allow for a flexible range of locations and sizes of open spaces in order to fully protect, enhance or create wetlands, wildlife habitats, or stream corridors. To the greatest extent possible, provide connectivity between open space and habitat areas to enhance wildlife benefits.

9. Encourage opportunities for nature-based recreation, such as bird-watching and environmental education.

[2] The Green Loop concept is envisioned as a separated Class I multi-use path and open space corridor that connects the Nishi project to the UC Davis Arboretum and the Putah Creek multi-use trail, providing efficient mobility through the site for building residents and workers as well as the larger Davis community.

10. Provide natural area enhancements such as native bee boxes, bat houses, owl boxes, etc.

11. Allow limited amenities within open space areas such as site identification signage, benches, picnic areas, bike racks, children's play areas, observation decks, trash/recycling receptacles and interpretive signage along the multi-use trail.

12. Create a decomposed granite or similar material running trail around the periphery of the entire Nishi development to provide an active recreational amenity for joggers and runners in concert with habitat restoration and open space conservation goals.

13. Avoid elements such as turf areas, ornamental plantings and active use facilities (e.g. courts, turf fields) in Open Space and Habitat areas.

Figure 2


Main Quad
1st Street
Old Davis Road
Aggie Village
D Street
Downtown
Amtrak Station
Richards Blvd
80
Arboretum
Putah Creek Multiuse Path
Olive Drive
Shields Library
Hutchison Rd
Putah Creek
Northern Park (public)
Large park and open space area with protected natural habitat and stormwater features
Putah Creek Open Space (public)
Expanded greenway along the Putah Creek trail corridor
Residential Park A (private)
Resident-serving park located on the second floor of the building above the parking podium
Solano Park Housing
Lake Spafford
Residential Park B (private)
Resident-serving park located on the second floor of the building above the parking podium
Nishi
Property
Residential Park C (private)
Resident-serving park located on the ground level between the buildings (or above parking podium)
Central Plaza (public)
Plaza area between the two Research and Development buildings
Green Loop (public)
Linear bike and pedestrian parkway linking each building to the UC Davis campus
Eastern Open Space (public)
Green buffer and stormwater area between the garage and Interstate 80
Residential Park D (private)
Resident-serving park located on the second floor of the building above the parking podium
Multiuse Path
Mondavi Center
Vanderhoef Quad
Southern Park (public)
Larger community park
Old Davis Road
Future Shrem Art Museum
AMTRAK
Southern Detention/Open Space (public)
Open space area with integrated swales and detention basin
Multiuse Path
80
09.08.15
FIGURE 6-1: CONCEPTUAL OPEN SPACE AND PARKS PLAN
LEGEND
City Boundary
Nishi Property Plan Area
Creek
Public Park
Private Park
Open Space/Detention
DAVIS
Nishi Gateway
0
100
300
500 ft

Public Parks

Intent. Create a series of public parks that provide active, outdoor recreation and relaxation for residents, workers and visitors on the Nishi property.

1. Develop the southern portion of the site as a park surrounding the stormwater detention area (see **Figure 2**).

2. Orient pathways and outdoor seating areas on public parks towards beautiful views like larger trees, water features, the Coastal Range, and unique stormwater management systems. This should also include protecting views towards prominent architectural and cultural features, such as the Mondavi Center for the Art and Shrem Art Museum, in order to visually connect the Nishi property with UC Davis.

3. Include a combination of children's playground, picnic facilities, and natural areas into on-site parks. There is a potential for a multi-use open field to serve the high density residential and employee population within the Nishi development as well; however, total turf coverage should be kept to a minimum in order to reduce irrigation needs.

4. Encourage greater physical activity with walking and running trails, connections to multi-modal transportation options and bicycle racks.

5. Create publically accessible multi-use sport courts within public areas to create activity while also activating public spaces.

6. Ensure all public parks provide access and usability to people of all ages and abilities as required by the ADA. This includes designing and installing playground equipment that is accessible for people using wheelchairs.

7. Create a series of fitness amenities within parks and trail areas including active fitness equipment, pull-up bars, disc golf, steps, inclined surfaces, etc. to encourage exercise.

8. Allow amenities such as site furnishings (picnic tables, benches, bike racks, drinking fountains and rehydration stations, trash/recycling receptacles, etc.), tot lot and playground equipment, general landscape improvements (including tree planting), looped pathway system connecting park elements, and picnic shelters.

9. Consider amenities such as multi-use sport courts, basketball courts, tennis courts, horseshoe pits, other sports facilities (disc golf, bocce, pickle ball, gaga court, etc.), outdoor game table space (ping pong, chess/checkers, etc.) field lighting, skate park, custom-designed play environment, off-leash dog area, community gardens, concession or vendor space, interpretive signage, natural area/greenspace, public art, performance space, such as a stage area

or bandshell, special facilities such as an indoor recreation center or swimming pool, and storage or maintenance buildings.

10. Avoid amenities such as amplified sound, powered equipment, artificial turf or other features that would be inconsistent with the sustainability and energy efficiency goals of the project.

Private Parks

Intent. Create a series of private parks within larger Residential buildings that will serve as outdoor spaces for recreation and enjoyment for building residents and their guests.

1. Create a series of private parks within and between Residential buildings that create special places with controlled access for building residents.

2. Program outdoor healthy amenities such as yoga and Pilates into the private open spaces.

3. Allow amenities such as game tables, dining areas, art, wireless internet connections, children's playgrounds, picnic areas and other special features.

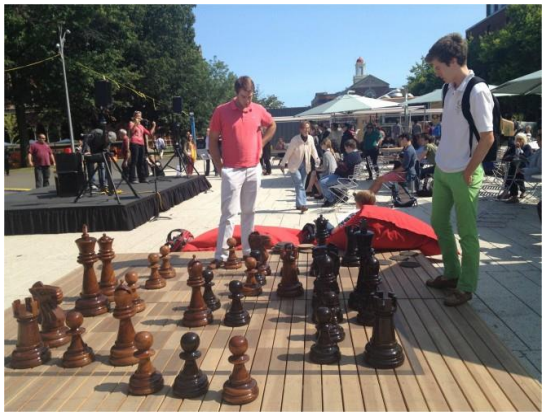
4. Consider amenities such as smaller-scale active recreation and sports courts. These amenities would be most appropriately located on the second floor of Residential buildings.

5. Avoid amenities such as utility infrastructure, water features (other than pools or spas for building residents and their guests) or other features that would be inconsistent with the sustainability and energy efficiency goals of the project.

Plazas

Intent. Create smaller, more formal hardscape areas that frame the entrance to buildings and provide spaces for outdoor interaction and enjoyment. These plazas are likely to be on private property and provide a transition between the public and private realms.

1. Create plazas at key locations on the site so they can be framing elements that provide direction to the entrances of buildings, retail stores and restaurants.
2. Construct all plazas with permeable pavers that integrate into the overall stormwater control system.
3. Include amenities in plazas such as seating, game tables, drinking fountains or water bottle filling stations, dining areas, art, or a wireless internet connection.
4. Consider accommodating food truck events, farmers' markets, or similar outdoor events in larger plazas.



Signage and Amenities

Gateways

Intent. Create unique and special entry points that provide a sense of arrival, showcase the green character of the area, and promote the overall brand of the Nishi development. Gateways that are targeted for these improvements are shown on the Nishi development site plan.

1. Create well defined gateways into the Nishi development through the use of distinctive monument signage, plant selection and placement, and public art (gateways are shown on **Figure 3** Site Plan in the Sustainability Implementation Plan).
2. Install art features that pay homage to the site's agricultural heritage, while also promoting the project's urban agriculture and sustainability features.
3. Utilize opportunities within the public right of way at key perimeter intersections and approaches into the Nishi development to define entry and create a sense place.
4. Install gateway monument signage and amenities at bus stops and at the entrance to the multi-use trail to provide a sense of arrival into the Nishi development for transit riders and bicyclists. Ensure that these features are elegantly designed and contribute to the overall character of the Nishi development.
5. Provide clear entrances and gateways to the site and major recreational uses, and establish a clear hierarchy of pedestrian and vehicular circulation.

Figure 3


Main Quad
1st Street
Old Davis Road
Aggie Village
D Street
Downtown
Amtrak Station
Richards Blvd
80
Arboretum
Shields Library
Hutchison Rd
Putah Creek
Putah Creek Corridor
Olive Drive
Residential | 80 units
5 stories | 61 du/acre
1.3 acre parcel, with 0.61 acres private open space
Cascading garden terraces along sightlines
180 bike parking | 120 car parking
Solano Park Housing
Open Space/ Parks
Residential | 130 units
5 stories | 57 du/acre
2.3 acre parcel, with 0.6 acres private open space and 0.6 acres public open space
240 bike parking | 120 car parking under podium
+75 surface car parking behind building
Lake Spafford
Nishi Property
Research & Development
90,000 ft² | 0.85 FAR
3 stories
150 bike parking | 175 car parking
+ 50 car parking off-site in garage
Residential | 260 units
5-6 stories | 55 du/acre
4.0 acre parcel, with 1.4 acres private open space and 0.9 acres public open space
520 bike parking | 125 surface car parking behind building
+343 car parking off-site in garage
Research & Development
110,000 ft² | 1.8 FAR
3 stories | 20,000 ft² Retail
Attached 3-story garage (4 floors/845 car capacity)
Green wall screen along I-80
315 bike parking | 275 car parking in garage
Residential | 180 units
5 stories | 82 du/acre
2.2 acre parcel, with 1.1 acres private open space
360 bike parking | 180 car parking under podium
+90 surface car parking behind building
+54 car parking off-site in garage
Research & Development
62,500 ft² | 1.0 FAR
3 stories
180 bike parking
50 surface car parking
+ 106 car parking off-site in garage
Vanderhoef Quad
Mondavi Center
Old Davis Road
Shrem Art Museum
(under construction)
Open Space/ Parks
Research & Development
62,500 ft² | 0.75 FAR
3 stories
180 bike parking | 141 surface car parking
+ 15 car parking off-site in garage
Stormwater Detention
80
09.08.15
NISHI PROGRAM STRATEGY
PROGRAM ELEMENTS | AREA | UNITS/SQ. FT. | NET DENSITY/FAR | BIKE PARKING | CAR PARKING
Residential: Rental | 6.2 acres | 440 units | 65-82 du/acre | 880 | 792
Residential: For Sale | 3.6 acres | 210 units | 57-61 du/acre | 420 | 315
Research & Dev. | 5.0 acres | 325k ft² | .75-1.8 FAR | 650 | 818
Surface Parking | 5.9 acres | - | | |
Retail | - | 20k ft² | | |
Roads | 3.0 acres | | | |
Putah Creek Corridor | 3.3 acres | | | |
Open Space & Parks | 15.9 acres | | | |
Detention | 4.0 acres | | | |
TOTAL | 46.9 acres | 650 units 325k ft² R&D 20k ft² retail | | 1,950 bike P | 1,925 car P
SITE PLAN
City Boundary
Nishi Property Plan Area
Gateway
Creek
For-Sale Residential
Rental Residential
Research & Development
Surface Parking
Park/Greenway
MultiuseTrail
Stormwater Swale
Solar Panels
DAVIS
Nishi Gateway
0 100 300 500 ft

Signage and Wayfinding

Intent: Establish an overall signage and wayfinding program that will visually knit the Nishi development together; connect to Davis Downtown and UC Davis; support and promote the unique brand; enhance the pedestrian environment; and assist employees, residents, and visitors in finding their way in and around the area with convenience and ease.

1. Develop a consistent naming convention by ensuring all new signage includes the name "Nishi Gateway."
2. Develop consistent thematically branded wayfinding and signage throughout the Nishi development, maximizing visual recognition for vehicular, pedestrian, and bicyclist circulation.
3. Provide on-site and off-site directional signage to parking areas, major bus stops, train station, Davis Downtown and key community amenities such as public parks, open space areas and the Putah Creek Trail corridor.
4. Explore opportunities for educational and interpretive signage to highlight important natural features and habitat conservation efforts on the site. In particular, locate this signage along multi-use paths near the specific natural and sustainability features they describe and highlight.
5. Protect existing and place new prominent landscaping and trees so they help improve wayfinding through common spaces, identify building entryways, and frame vistas.
6. Place wayfinding and directional signs at a height visible for both pedestrians and drivers. Signs should be placed at approximately eight to 10 feet above ground. Scale signage to be visible both from the roadway and sidewalks.
7. Scale directional sign letters and numbers so they are no less than four inches tall for bicyclists and pedestrians.


40
ROUTE
CRAFT CTR
Freeway Entrance
Amtrak
UC Davis
LIBRARY
SILO


Protecting Our Watershed


DAVIS BIKE LOOP

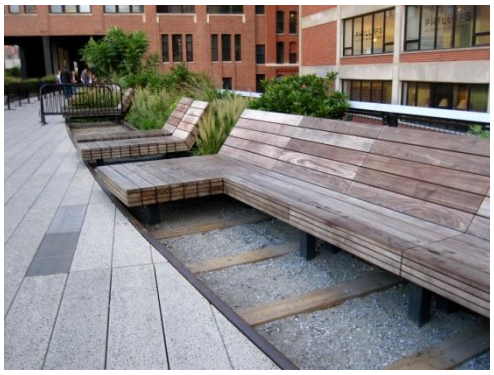

Downtown Core
Downtown Core
Bow Valley College 7 min
City Hall
East Village 2 min
Fort Calgary 12 min
City Hall Station
City Hall Station

Street Furniture

Intent: Ensure a well-designed, functional, fun and safe environment in the Nishi development through the installation of street furniture.

1. Provide pedestrian-friendly streetscape amenities – including seating, art, trash/recycling receptacles, and bus shelters – at key retail, employment, transit and public park destinations on the site.
2. Provide bicycle racks and/or lockers at key locations throughout the Nishi development– especially near entrances to buildings.
3. Ensure that bicycle racks are placed in highly visible locations and in sufficient quantities to meet user demands[3].
4. Provide bus shelters at all bus stops, and require a minimum of six-foot sidewalk clearance for the pedestrian passage way to ensure they do not obstruct pedestrian circulation.
5. Design safe, functional, visually iconic, energy efficient and user-friendly bus shelters. Consider the use of solar panels to power lighting and monitors, require ADA accessibility, and ensure maximum transparency to enhance safety.

[3] See the City of Davis Municipal Code, Chapter 40 Zoning, Article 40.25A Bicycle Parking for specific bicycle parking standards. Available online at: http://qcode.us/codes/davis/.



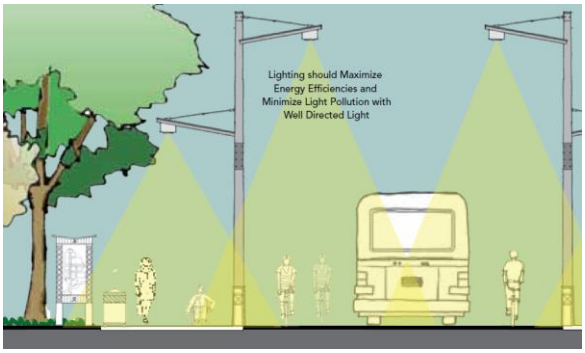

roofmeadow
Green roofs. For good.


HIGHLAND BLVD.

Exterior Lighting

Intent. Ensure a well-designed, functional, and safe environment in the Nishi development through the installation and proper placement of exterior lighting.

1. Provide both automobile-oriented and pedestrian-oriented street lighting throughout the Nishi development to meet/exceed City of Davis lighting standards and to provide a safe and comfortable pedestrian environment.
2. Require 100 percent solid-state outdoor light emitting diode (LED) technology or similar energy efficient light bulbs in all public light fixtures to reduce energy costs.
3. Incorporate smart controls on outdoor lighting that switch or dim lights based on the time-of-day, available daylight, or occupancy, to reduce lighting energy use.
4. Incorporate bi-level occupancy controls at all pathway and parking lots. On the low level, light levels should be reduced to at least 50 percent of maximum illumination. In some areas where occupancy is expected to be very low, lighting may be completely turned off as long as safety is not adversely affected.
5. Consider installing lighted pavement modules to create a unique, sustainable lighting source for the multi-use pathway. This may include glow-in-the-dark systems that do not use any electricity so long as they do not create a safety issue.
6. Install photovoltaic powered light fixtures where feasible along roadways, in parking lots and along pathways in order to reduce the need to offset site lighting electricity use.
7. Direct light downward by choosing the correct type of light fixtures to minimize glare and light pollution.
8. Zone lighting circuits appropriately such that adjacent bays are controlled independently to reduce lighting energy use.


Lighting should Maximize
Energy Efficiencies and
Minimize Light Pollution with
Well Directed Light

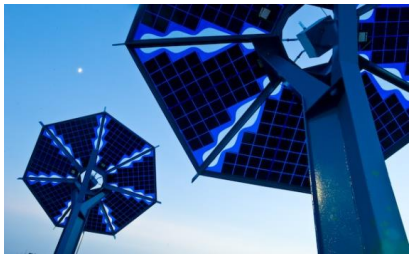
Public Art

Intent: Promote creativity and strengthen the Nishi development sustainability and innovation brand through the design and placement of unique and functional public art.

1. Display public art pieces at gateways, on bulb-outs, along wide sidewalk spaces, public open spaces, adjacent to bus stations and near the entrances to buildings so they are highly-visible and become iconic features for the Nishi development.
2. Install a cohesive series of art pieces that are organized either by theme, artist, style or materials.
3. Encourage art pieces that serve both an aesthetic and functional purpose, such as sculptural bicycle racks, trash/recycling receptacles, seating, lighting posts, utility boxes and renewable energy generating structures (e.g., wind turbines and solar panels). Incorporate "report back" functions into these art features to show real time water and electricity use.
4. Explore opportunities for local and regional artists to design, fabricate and install public art that reflects and promotes the sustainable and innovation characteristics of the Nishi development.
5. Encourage public art that reflects Davis' unique history and/or promotes the image of the Nishi development becoming a center for the sustainability and innovation.






Buildings

Building Footprints and Placement

Intent. Ensure the placement of new buildings on the Nishi property provides easy and safe access, helps activate public areas and streets, and supports the sustainability goals of the project.

1. Consider aligning all final building footprints similar to the footprints identified on the conceptual site plan (shown on the next page) in order to provide the most efficient use of the property. This includes maximizing the amount of pervious surfaces, supporting the Green Loop concept, and allowing for an active and engaged central spine road through the project. Building and roadway footprints may vary from the conceptual site plan so long as they continue to:

    a. Support the mobility, civic and sustainability goals of the project;

    b. Support the Green Loop concept and allow for future access to the UC Davis campus; and

    c. Support on-site bicycle circulation as the primary means of travel within and through the site.

2. Ensure building footprints facilitate external circulation and allow for maximum accessibility and connectivity within and between areas of campus and Downtown.

3. Orient buildings in a way that takes into consideration future phases of development on or adjacent to the building site, including shared access and potential linkages to such development (e.g. building entries) and building additions.

4.

5. Ensure that buildings have frequent and unique articulation and setback depth in order to break-up larger facades and provide more opportunities for natural heating and cooling. This includes creating articulation on facades that front both Interstate 80 and the Union Pacific railroad track to break-up the mass of larger buildings and parking structures.

6. Orient primary building facades, entrances and active uses so they face proposed park and open space areas and the central spine road. This will provide safety and easy access into buildings and the building in turn will provide “eyes on the street” and activate the adjoining public spaces.

7. Orient primary and secondary building facades and common active gathering spaces such as building lobbies, reception areas and bicycle storage areas on the southeast sides of buildings to maximize natural sunlight, ventilation and passive heating and cooling.

8. Orient tertiary facades, if necessary, to face service areas such as loading and unloading docks, etc. Tertiary facades

should be screened from general view by landscaped elements, such as a double row of trees. Passive uses could face the north side of buildings where natural lighting and heating are not as crucial.

Building Mass and Scale

Intent: Maintain the sustainability benefits of larger buildings while designing them to blend into the identifiable and accessible human scale of the site.

1. Utilize setbacks and stepbacks to reduce the bulk of buildings while respecting the human scale and providing visual intrigue.
2. Utilize setbacks and stepbacks in particular on the north side of buildings to reduce shadows cast from the buildings onto adjoining parks, open spaces or paths.
3. Break-up the vertical mass of larger buildings through architectural elements such as strong horizontal bands or lines created by an array of windows, cornices or other similar features.
4. Ensure adequate floor to ceiling heights for all Research & Development buildings to allow the buildings to be used and re-used for a variety of different uses including offices, laboratories, technology centers, classrooms, etc.
5. Celebrate building entrances with key vertical and horizontal elements, lighting and accent materials.
6. Place and appropriately size windows so they respond to solar orientation, provide “eyes” on the adjoining open spaces, open views and provide for natural ventilation.
7. Design buildings with adequate buffers and fenestration when fronting major streets, plazas and parks.
8. Ensure buildings have a color and materials palette that is harmonious with innovation and technology, while also responding to sustainability objectives (e.g., low energy construction materials, cool colors to prevent heat gain, etc.).
9. Seek out building materials that are locally made and/or that produce minimal pollution or have minimal adverse impacts to the environment.

Orientation and Daylighting

Intent. Orient and design buildings to take maximum advantage of natural lighting as a method for reducing overall energy demand for the project.

1. Orient and shape buildings to reduce heating and cooling energy use and encourage daylighting.
2. Provide exterior shading to southern glazing to minimize unwanted solar heat gains during the summer and maximize solar gains during the winter, while also allowing for windows to provide natural daylight, thus minimizing the need for artificial lighting during the day.
3. Provide appropriate exterior shading on east and west glass to address direct solar gains at low sun angles.
4. Utilize adaptive light layering for task, accent and ambient lighting. This will allow for lighting levels to be safely reduced under multiple circumstances.
5. Incorporate high-efficiency domestic hot water (DHW) systems in multi-family buildings and Research & Development buildings.
6. Design and install high-efficacy and functional lighting system buildings.
7. Optimize the building shell design and space configuration for daylighting strategies. Install controls for both primary (directly adjacent to windows) and secondary (adjacent to primary space opposite the windows) day lit spaces with continuous ramping capability.
8. Consider the use of light shelves to extend the range of daylighting into the building.
9. Use a combination of low ambient lighting with the space sub-divided into smaller zones for lighting control purposes, and high-quality task lighting with personalized controls in open office environments.



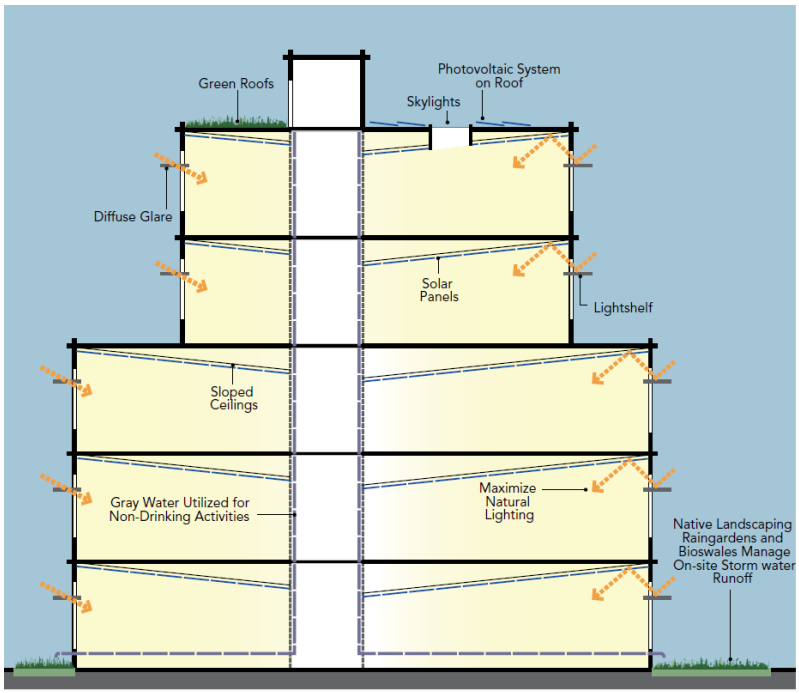

Natural Heating and Cooling

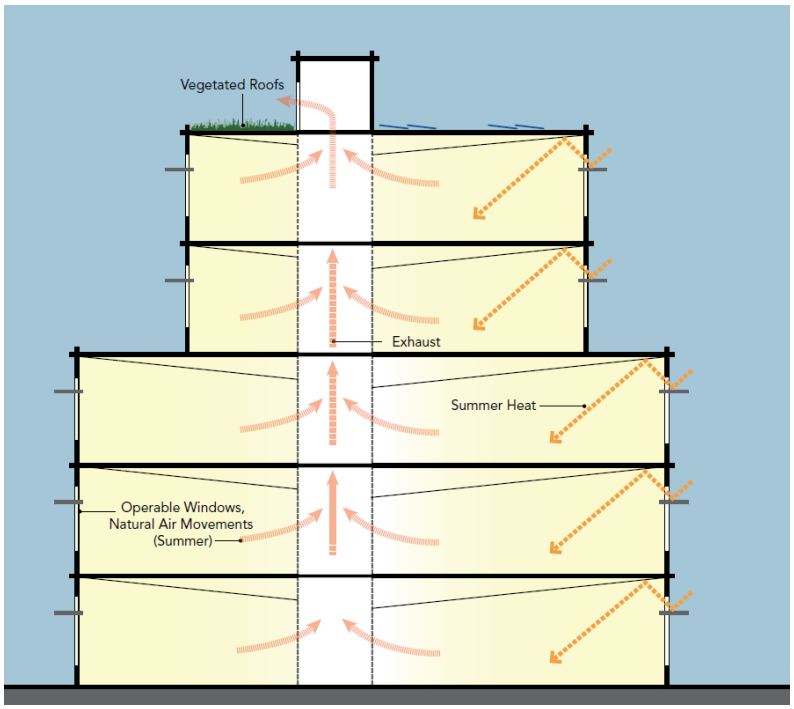
Intent. Ensure that all buildings utilize innovative technology, design approaches and materials to maximize natural heating and cooling as a method for reducing overall energy demand for the project.

1. Design and construct all Residential and Research & Development buildings to reduce heating and cooling loads and subsequently minimize space conditioning energy use.
2. Incorporate high-efficiency heating, ventilation, and air conditioning (HVAC) systems in multi-family Residential and Research & Development buildings.
3. Place occupancy controls in all rooms and dimming controls where applicable in order to reduce lighting energy use and act as a part of high-efficiency lighting design.
4. Use supply ventilation with filtration systems for fresh air ventilation in multi-family buildings.
5. Conduct third-party verification of Residential building envelopes and mechanical measures to ensure quality installation that meets design expectations.
6. Incorporate miscellaneous load controls and occupant feedback mechanisms in multi-family buildings and Research & Development buildings.
7. Conduct building-wide commissioning of the Research & Development buildings prior to occupancy to verify building systems performance and ensure quality installation that meets the design expectations.
8. Design building rooftops to allow for photovoltaic to cover 75 percent of total rooftop area for the multi-family buildings and 50 percent for the Research & Development buildings in order to maximize on-site energy production to reach sustainability goals.
9. Install Energy Star appliances in multi-family buildings and Research & Development buildings.
10. Install standard HEFs (low-flow showerheads, bathroom/kitchen faucets and toilets) and low-water/Energy Star appliances such as clothes washers and dishwashers.
11. Substitute HEFs with ultra-high-efficiency fixtures (UHEFs) to the maximum extent practicable.
12. Apply features to the top of the Research & Development buildings to reduce heat

gain and improve energy efficiency within the buildings themselves. This includes applying "cool roof" materials (e.g., lighter-colored, higher-albedo materials) that can help to reduce solar reflectance, plants, or other materials/colors that would help to minimize the project's contribution to the urban heat island effect.

13. Install operable windows to encourage natural air movement in summer months in order to reduce energy costs.




Vegetated Roofs
Exhaust
Summer Heat
Operable Windows,
Natural Air Movements
(Summer)

Retail and Dining Activities

Intent. Allow for the flexible placement of retail and dining uses within either the rental Residential or the Research & Development buildings (see Planned Development Area zoning code for a list of allowed use).

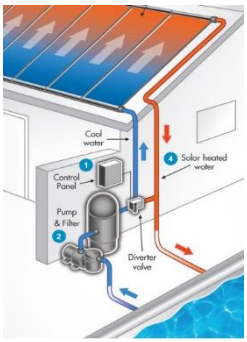
1. Encourage the placement of retail and dining uses on the ground of Residential and Research & Development buildings facing the central spine road and near main entrances to these buildings.
2. Appropriately size and scale individual retail and dining uses so they can be flexibly to a multitude of tenants.
3. Promote outdoor dining and the display of selected locally produced goods (i.e., fruit and vegetable stands, flowers, clothing standards, etc.) on sidewalks or small plazas, where there is sufficient width, to activate the streetscape.
4. Maintain an unobstructed pedestrian zone of five feet that is in addition to area dedicated for sidewalk seating, displays or activity areas.
5. Explore the use of micro commerce[4] on the sides of buildings facing pedestrian features and the central spine road as a way to activate pedestrian spaces with small commercial uses.
6. Utilize entryways, small plazas and park space as additional areas for customer seating.

[4] Micro Commerce refers to small (less than 500 square feet) retail uses that are designed into the side of a building, fronting a sidewalk or pedestrian space.

Pools and Spas

Intent. To provide desired aquatic amenities for residents at the Nishi development while incorporating sustainable and energy efficient design.

1. Consider including one unheated swimming pool within or adjacent to the Residential buildings. This facility could be located either within one of the podium parking areas (assuming there is enough space to also meet City of Davis parking requirements) or possibly within a second floor outdoor private park space.
2. Consider including up to three heated spas within one or more of the Residential buildings. They could be located within a second floor outdoor private park space or designed so they are internal to the building.
3. Locate pools and spas only within residential areas that have controlled access.
4. Incorporate passive heating systems (e.g., photovoltaic or heat exchange) into the design of all pools and spas.
5. Consider designing naturally-filtered swimming pools that consist of a constructed body of water, where the water is contained by an isolating membrane or membranes, in which no chemicals or devices that disinfect or sterilize water are used, and all clarifying and purifying of the water is achieved through biological filters and plants rooted hydroponically in the system.



Sustainability and Energy Production

Urban Agriculture

Intent. Utilize public spaces, private parks, the sides of larger buildings, and rooftops for urban agricultural uses to produce fruits and vegetables that may be consumed on site by residents, workers, and visitors.

1. Dedicate a minimum of 10 percent of the landscaped area on the site to food production (e.g., community gardens, edible landscaping, rooftop vertical Aeroponics system, green walls, etc.). This should include areas identified as parks (public or private) or landscaped areas along interior roadways.
2. Create at least one public garden that can be used for both educational and food production purposes. The garden should be large enough to grow a wide variety of fruits and vegetables, and include onsite water catchment to be used for irrigation.
3. Encourage the planting of large fruit trees as a means for providing on-site edible landscaping; however, ensure that these trees do not negatively impact paved sidewalks by dropping fruit and creating safety or slip hazard.
4. Optimize sustainable onsite food production; however, balance the tradeoffs for solar photovoltaic production/ harvesting and food production/ harvesting.
5. Encourage the use of high-performance vertical agriculture systems that result in achieving the following sustainability and design targets:
    a. Requires 90 percent less land and water than traditional agriculture;
    b. Uses closed-loop systems that recycle 100 percent of available nutrients and water;
    c. Grows three to five times faster and 35 percent larger vegetation than traditional agriculture;
    d. Grows up to 44 plants within a 30 inch diameter footprint;
    e. Reduces maintenance and pests;
    f. Allows accessibility for people with disabilities;
    g. Results in increased food productivity, security and nutrient value.
6. Focus vertical agriculture on locations with all day sun light, preferably with good southern, eastern and western exposure. This includes rooftops, courtyards, balconies and patios.
7. Design vertical agricultural systems so rows are aligned true north/south to allow for even sun throughout the day.
8. Encourage creative and cutting edge applications for urban agriculture in order to redefine the traditional community garden and showcase the Nishi development project as an

innovation center for research and education.

9. Require urban agriculture in public spaces to meet the following maintenance requirements:

    a. The residential owners/ management companies shall establish a dedicated person to coordinate maintenance for streetscape agricultural and public gardens;

    b. The residential owners/ management companies will be responsible for keeping streetscapes and private/public gardens actively worked and free of invasive weeds; and

    c. The residential owners/ management companies will identify an Ombudsperson(s) and coordinate with local restaurants on the harvesting and distribution of on-site fruits and vegetables.

10. Require community gardens located on private spaces to meet the following maintenance requirements:

    a. Residential owners or management companies shall establish a dedicated Ombudsperson to coordinate maintenance for each garden;

    b. Individual residents will sign up for specific plots/responsibilities with the Ombudsperson;

    c. Individual residents will be responsible for keeping their plots actively worked and free of invasive weeds;

    d. Individual residents will be responsible for keeping the pathways around their garden maintained;

    e. Individual residents must keep the pathways clear for easy, safe walking and maneuvering of wheelbarrows; and

    f. Individual residents are responsible for maintaining the community areas (including when they travel for an extended period of time by appointing someone to maintain their lot).

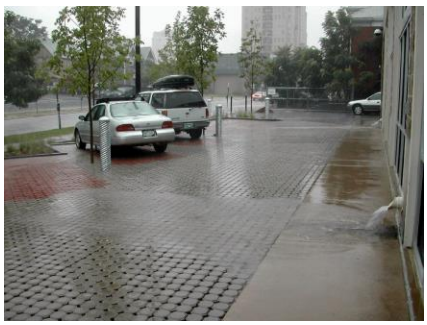
Stormwater Management

Intent. Create an integrated system of pervious and impervious systems that function together to capture, transport, filter/pre-filter and treat on-site stormwater in order to reduce off-site flows, replenish groundwater and provide water for onsite landscape irrigation.

1. Investigate the potential for a well to deliver a firm yield that meets the projected peak demand for irrigation or other non-potable water uses on Nishi property. This would reduce the supply of treated potable water needed for the project, thereby making more efficient use of potable water supplies in Davis.
2. Develop a prototypical plan for collecting, treating/disinfecting, storing and distributing graywater and harvested rainwater within each building.
3. Implement a site-wide non-potable water distribution system, if feasible, to be incorporated into the project site design, and possibly within some or all buildings.
4. When available, place pervious areas (open space, landscaping and pervious pavement) downstream of major impervious surfaces (roofs and conventional pavement), with site grading/landscaping designs that provide for sheetflow from those impervious surfaces onto the pervious surface areas to facilitate onsite pretreatment of stormwater runoff.
5. Implement drainage design solutions that avoid direct connection of roof downspouts to the receiving storm drain pipe system, and seek to provide landscape areas immediately upstream of proposed drain inlets that will receive runoff from new pavement areas.
6. Integrate small-scale distributed drainage management features such as shallow, decentralized surface ponding areas and/or rain gardens that are consciously designed into streetscapes and individual site landscapes throughout the Project area.
7. Incorporate stormwater planters at regular intervals into the landscape parkway strips of proposed street sections.
8. Design stormwater management systems to eliminate point source pollution wherever possible and feasible. This includes implementation of best management practices (BMPs) involved in housekeeping of the site after development has occurred and proper design of garbage and loading facilities so as eliminate or minimize the mixing of stormwater and point source pollutants.
9. Incorporate pervious surfaces into all multi-use paths, parking areas, side streets and access roads (e.g., all street except West Olive Drive and the new connection to UC Davis) to allow for biofiltration and to reduce the amount of impervious surfaces on the site.
10. Incorporate catchment basins along West Olive Drive, the new connection to UC Davis, and adjacent to the multi-use path in order to fully capture stormwater runoff from these two facilities, as well as adjacent buildings and plazas.

11. Install naturally drained, landscaped bioswales where possible on sidewalks, medians, bulb-outs, parks and plazas to reduce the need for piped drainage.

12. Explore the financing, creation, and maintenance mechanisms of "sub-regional" or district level treatment zones with structural and non-structural municipal stormwater treatment facilities to assist in maximizing the development potential of physically constrained sites.



Waste Management

Intent. To encourage creative and sustainable methods for collecting, treating and/or reusing post consumer waste generated by the Nishi development in order to limit the amount of waste transported and disposed of off-site.

1. Create building-specific plans for collecting, treating/disinfecting, and reusing recycling on-site. Each building should have clearly marked bins located in convenient places, with separate bins for landfill, recyclable, and compostable materials.
2. Provide educational materials within residential buildings for what materials are compostable and how to best use onsite composting facilities as a means to get residents directly involved in waste management.
3. If permitted by City of Davis regulation, compost 100 percent of all on-site agricultural and landscaping clippings and other organic materials. Use the resulting compost as natural mulch for urban agriculture, parks, and landscaped areas.
4. Incorporate solar powered composting equipment in order to provide net-zero energy composting. This should include both larger scale facilities for agricultural and landscaping waste, as well as small self-power composting bins.




Energy Production

Intent. Utilize the Nishi property's natural features of good solar access and flat terrain to produce on-site energy from solar and wind power. The energy produced on-site is primarily intended to power uses on the Nishi development, but can be sent into the regional electrical grid if there is excess during peak production hours.

1. Identify opportunities to install solar and wind energy-producing structures that would provide clean energy to local businesses and function as physical icons for the sustainable intentions of the Nishi development on publicly-owned property.

2. Encourage the unique design of wind energy turbines so they are interesting, moving art pieces that support the Nishi development's brand and provide visual interest to the area. Wind turbines should be limited on site, but could be included in the southern park and open space area to create a public art feature while also highlighting the project's sustainability intent. Turbines should be designed so they do not pose a hazard for wildlife.

3. Install both rooftop and surface parking photovoltaic arrays at a minimum tilt that's sufficient to encourage natural cleaning and removal of debris (typically 10 degrees) while minimizing self-shading issues. Low-slope installations in these applications provide the maximum production per square foot. Arrays should be oriented south (180 degrees azimuth) to the extent possible, but with a near flat array the impact of azimuth is not as critical as with steeper installations. When arrays cannot be situated directly south, they should be located within the azimuth range of 110 degrees to 270 degrees clockwise from north.

4. Install photovoltaic systems on structures that put the modules above rooftop equipment in order to maximize their efficiency, as allowed by the local codes and fire regulations.

5. Consider mounting photovoltaic panels in an East-West sawtooth arrangement on low-sloped roofs to yield higher energy production and improve grid-tied performance factors.

6. Provide shade with photovoltaic structure when tree shade is not possible. Arrays could be in the form of a shade canopy, creatively integrated into play structures, parking areas or sited on top of gazebos.

7. Consider elevating smaller photovoltaic systems over the stormwater detention basin, which is proposed in an area of approximately four acres in the southern tip of the site.

8. Explore locating photovoltaic along the eastern edge of the railroad setback along the southwestern boundary of the property if there is sufficient sun to warrant solar energy production (this area would have to be carefully coordinated with open space and the need for a sound barrier between the community and the tracks).

9. Consider incorporating photovoltaic panels on fixed building shading on south and west windows.

10. Consider directly piping biogas into the community if there is a nearby source.

11. Maximize the available area on building rooftops for photovoltaic such that 90 percent of total rooftop space at the multi-family rental and the Research & Development buildings, and 60 percent at the multi-family for-sale (to allow for roughly 33 percent of total rooftop area for garden terraces and green roofs) is made available for photovoltaic arrays.

Sustainable Plant Palette

Low and No-Water Plants

Intent. Plant and maintain distinctive, drought-tolerant, and sustainable landscaping in order to define the area's sustainability brand, reduce overall water consumption, reduce energy and maintenance costs, and provide an aesthetically-pleasing and enjoyable environment, while also preserving and maintaining existing heritage oak trees and habitat.

1. Use low-maintenance native and/or drought-tolerant plant species in streetscape landscaping to minimize water consumption and maintenance; and discourage the use of turf, grass or landscaping that requires high water usage, except for limited active use fields.

2. Ensure that all new landscaping, whether on public or private property, includes drought-tolerant plants in order to reduce maintenance costs, reduce water usage and promote sustainability.

3. Select tree species for planter strips and street medians consistent with the scale and design theme for each roadway segment (see **Figure 1** for the West Olive Drive typical street cross section)

4. Ensure that tree canopies are high and airy to create a pleasant streetscape without impeding truck or bus movement, roadway visibility, or bicyclist and pedestrian safety.

5. Identify plants appropriate for landscaping in the Nishi development as identified in **Table 1** on the following page. Many of these plants are native to California, and all plants have very low, low, or medium water needs as defined by the University of California Cooperative Extension (UCCE) Guide to Estimating Irrigation Water Needs of Landscape Plantings in California.

6. Consider using plants not included in **Table 1** only if they are drought-tolerant, California native species, and/or are cultivars or sub-species of the plants listed in the table.

7. Use a variety of plant types and densities that will have a range of water uses from medium to very low (see **Table 1)** to promote water efficiency while also allowing variety and interest in landscaping. For example, an overall mix of 55 percent very-low-water, 25 percent low-water, and 20 percent medium-water use plantings would be a viable combination for the Nishi property.

8. Select and locate plants according to the microclimate and group with similar water needs in separate hydrozones. Select no species that will require extensive shearing to ensure plants will grow within the space provided. In addition, select water conserving native and climate appropriate plants that are visually appealing and interesting while also provided the maximum carbon sequestration and air quality benefits.

9. Limit turf to only the southern park area where it will have access to water from the bioswale system.

10. Provide three inches minimum of mulch in all but turf areas. As appropriate, cover all soil with a minimum of three inches of recycled mulch, from green waste and or recycled wood construction waste.

11. Maximize carbon sequestration and air quality benefits by planting trees throughout the site in parks, open spaces, and along public streets. In particular, emphasize planting of trees to shade multi-use paths, sidewalks and parking areas in order to mitigate the heat island effect and encourage pedestrian activity.

12. Select tree species that are well-suited for filtration of particulate matter and ultrafine particulate matter, and are climate appropriate in terms of drought and heat tolerance.