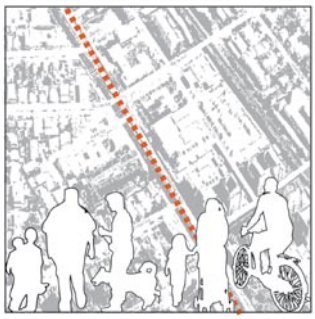
Code Design

The starting point is that the most permanent and enduring elements of cities are often related to the underlying landscapes—the geology, the topography, the rivers and harbors, and the climate. This does not mean a denial of the realities of globalization or the influence of technology, but recognition of the importance of place and its connection to natural systems (Mossop 2006, 172).

The attention required to craft a code that crosses jurisdictions and public/private boundaries requires a significant amount of attention to be paid to a specific place. Perhaps, this is exactly what the neglected "gray area" urban arterial needs to face the challenge of sustainable urbanism. The Urban Ecotone Code proposes five to six development typologies for the private realm along San Pablo Avenue, incorporating the existing building stock and land uses, into the code. The following elements create a framework for the layout of the development types, linking the public realm to the private: The hydrological infrastructure of creeks and culverts, the rolling topography of the watersheds, neighborhood centers, and transit-oriented centers. The existing cultural landscape plays a large role in the design of the Urban Ecotone Code.

TOPOGRAPHY

HYDROLOGY



COMMUNITY
Local & Regional

Designing the Urban Ecotone Code

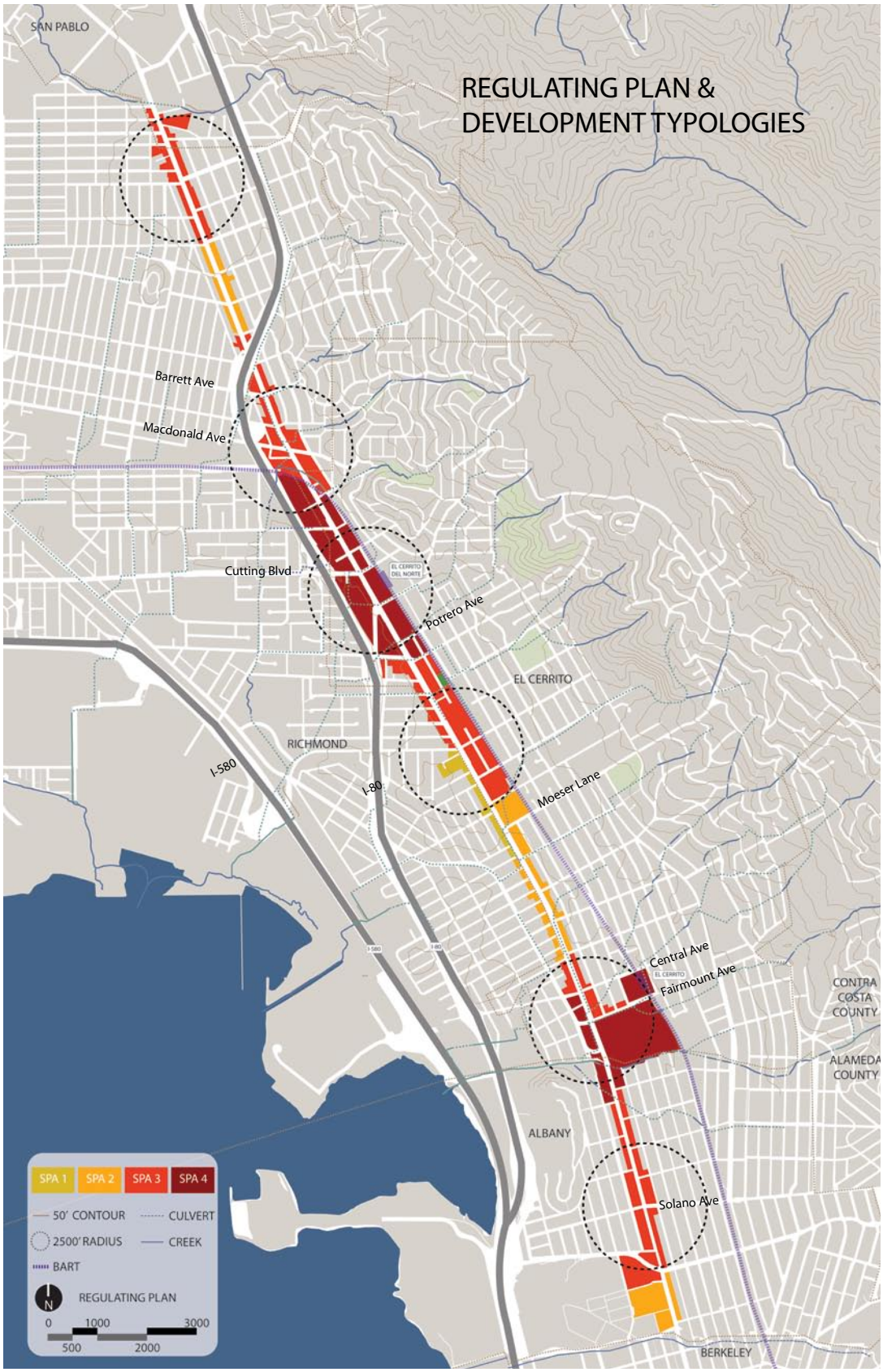
The Urban Ecotone Code presents a holistic code for all of the jurisdictions involved in the planning and design of the urban arterial by implementing concepts from form-based codes and performance-based codes. The Urban Ecotone Code is split into two parts: the private realm of parcel development and the public realm, including the connective infrastructure.

To refine the private/parcel design of the Urban Ecotone Code, architects and landscape architects from across the country and the world, admittedly good friends of mine, performed code tests by designing proposals according to the code for individual parcels along the corridor within the 5-mile strip. This chapter consists of a presentation and explanation of the code. The following chapter presents the results and findings from the returned code tests.

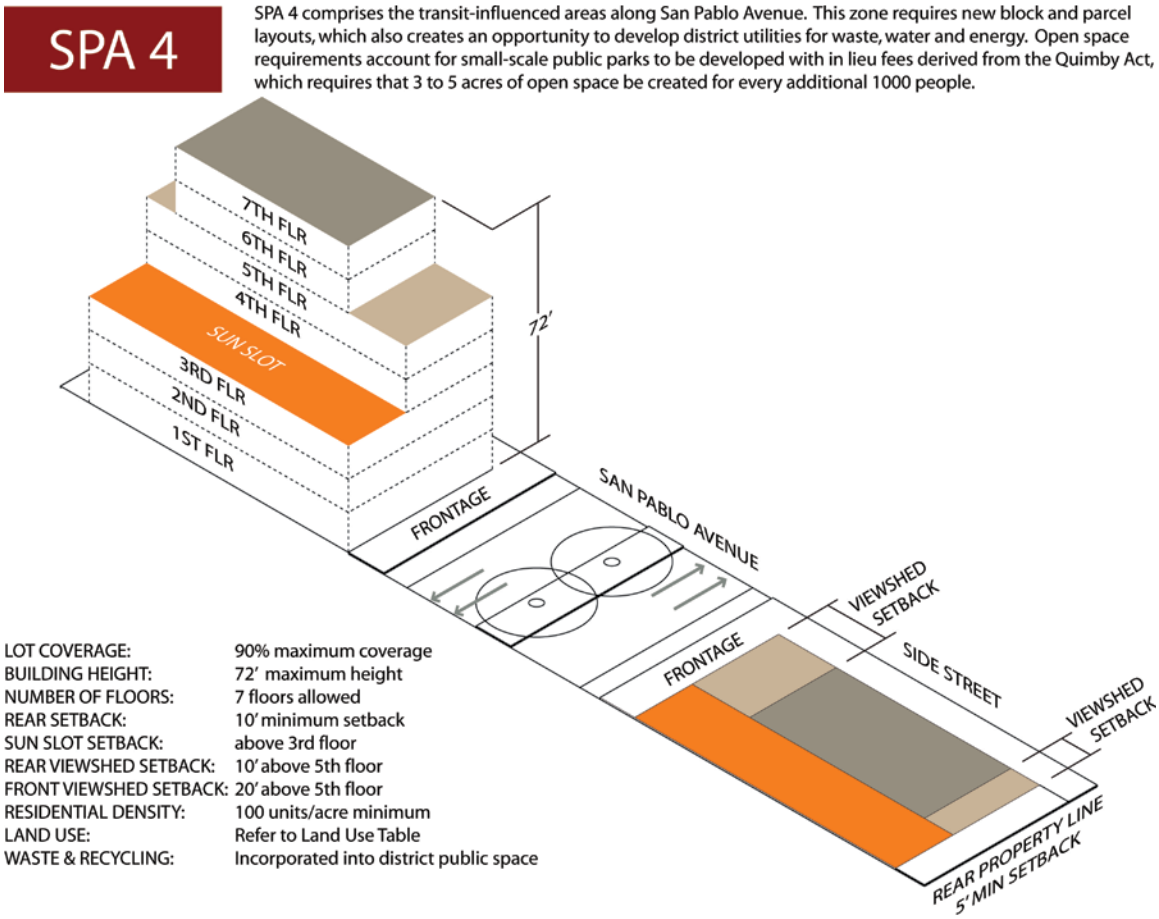
Following the basic format of a form-based code, the Urban Ecotone Code contains a regulating plan, design typologies, and an administrative text. The following form and performance standards were also included to support the urban ecotone concept: block and parcel standards, building frontage and massing standards, open space standards, sunlight standards, fresh air/ventilation standards, food security/production standards, alternative energy production standards, decentralized infrastructure standards, Leadership in Energy and Environmental Design (LEED) and Sustainable Sites Initiative (SSI) performance standards, on-site stormwater/rainwater harvesting standards, parking standards, on-site vegetation standards, and riparian and drainage area standards. A checklist was added as an evaluation tool as well as a concise way of understanding the code requirements and their applicability to the individual parcels. The idea for a checklist as well as some graphic inspiration came from Chan Krieger Sieniewicz's form-based code for the South Knoxville Waterfront, as illustrated in the analysis chapter. (I tested the Knoxville code while working at the firm, and this memory is what prompted me to seek others to test the Urban Ecotone Code.)

Regulating Plan and Development Types

The regulating plan was assembled from a wide pool of information. Initially, four types of development conditions were identified based on information taken from the ABAG Focus Initiative and the San Pablo Avenue Specific Plan. The ABAG Focus Initiative identified the two BART stations, within the 5-mile strip, as priority transit development areas, where a high intensity of uses and densities should be developed. The ABAG Focus Initiative identifies these areas for the entire corridor based on BART and AMTRAK stations, for a total of five areas of transit-oriented development. Specific to the two BART stations in the 5-mile strip, the availability/vacancy and large size of the parcels in these two zones also facilitates the transit-oriented development typology. On the regulating plan, these areas are labeled as SPA4. (Each development area also has an individual graphic and text description, which explains the specific requirements for that type. These will be elaborated upon later in this chapter.)

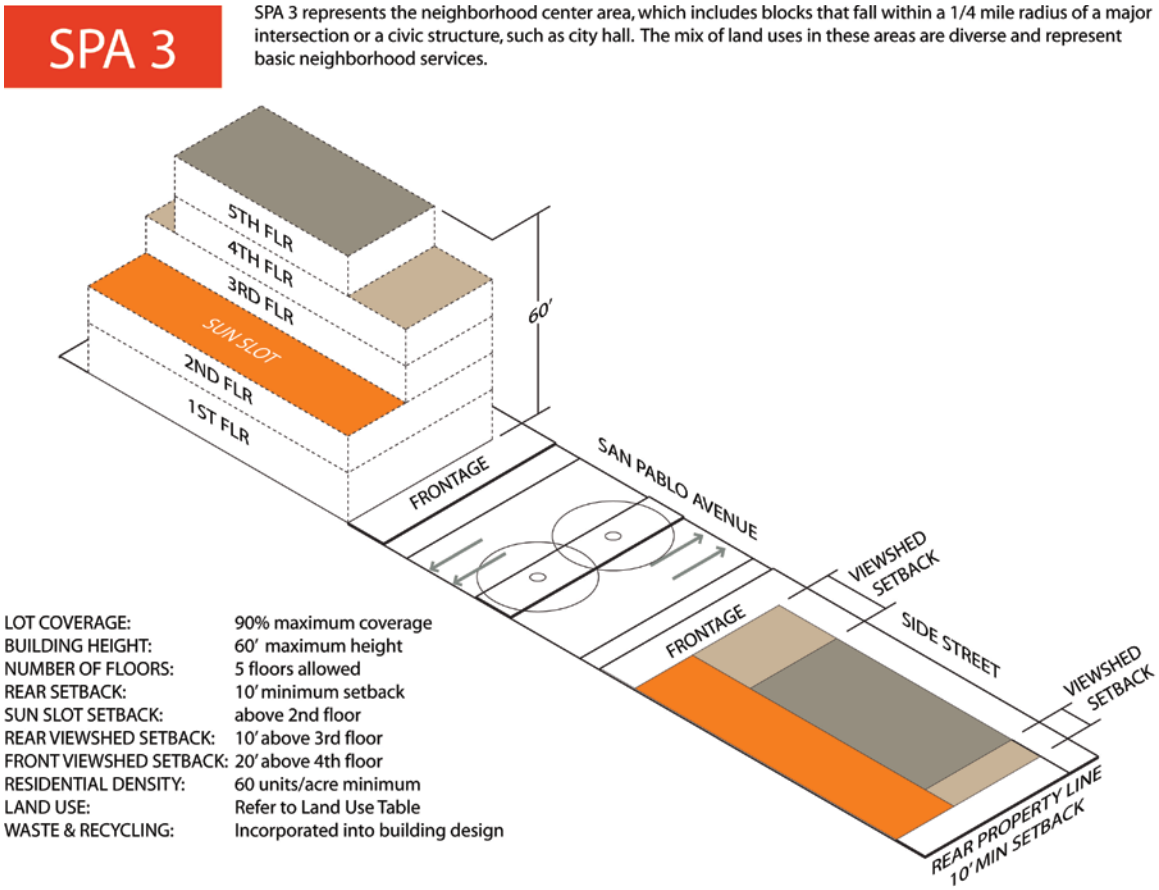


Urban Ecotone Code Regulating Plan



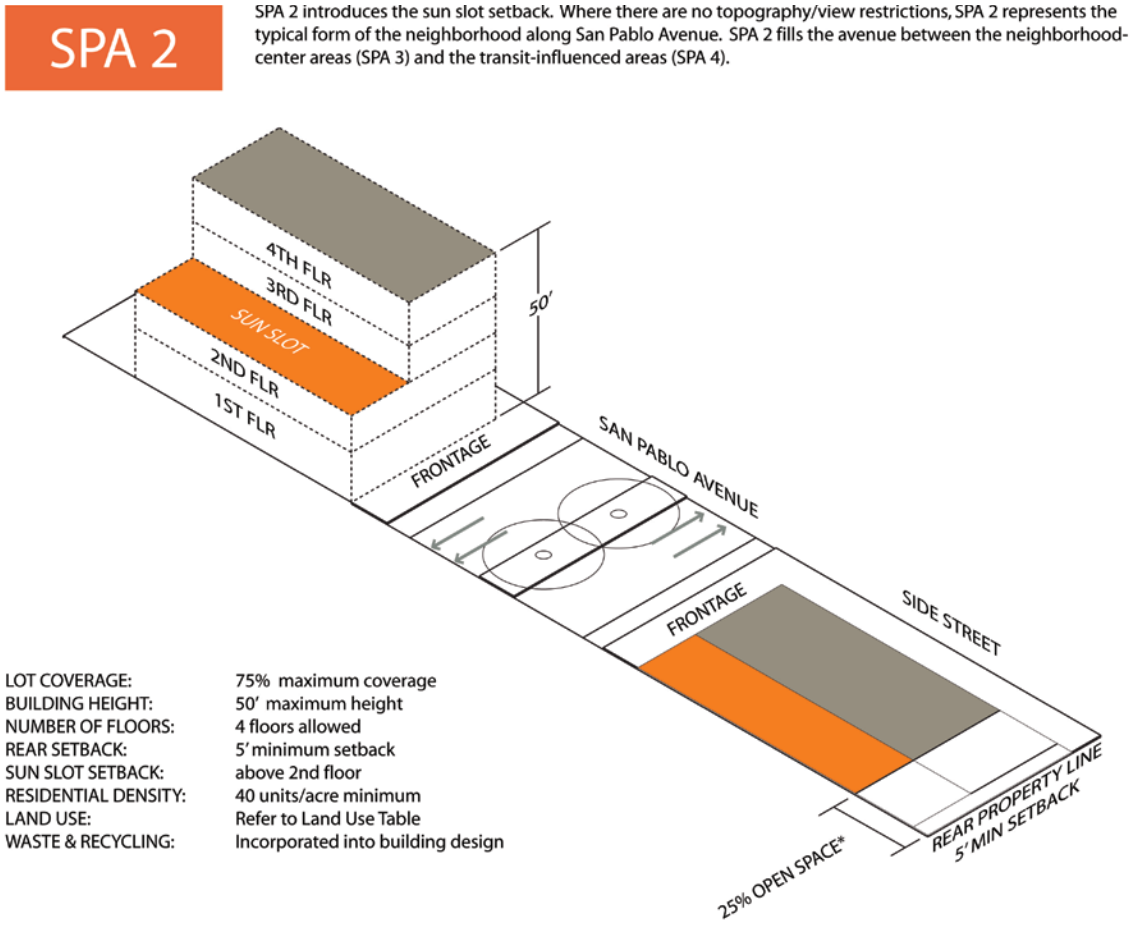
Urban Ecotone Code Development Type SPA 4

The next development type, SPA3 was determined by the designation of neighborhood commercial centers and/or civic centers in the San Pablo Avenue Specific Plan for the cities of El Cerrito and the adjacent areas of Richmond. All of the cities along San Pablo Avenue designate similar areas in their General Plans, which makes this a typical condition spaced intermittently along the corridor. SPA3 also serves as transitional building intensity between the transit-oriented intensity of SPA4 and the typical condition intensity of SPA2. Admittedly, this thesis subscribes to the urban design rubric of legibility, and therefore, the neighborhood centers where there is a greater mixing of people and uses, reads as differentiated from the typical development condition. Stated in terms of ecology, SPA4 and SPA3 are patches of increased diversity, while SPA2 and SPA1 facilitate movement along and across the corridor; all of them contributing to the edge effect otherwise known as connectivity and permeability of a place.



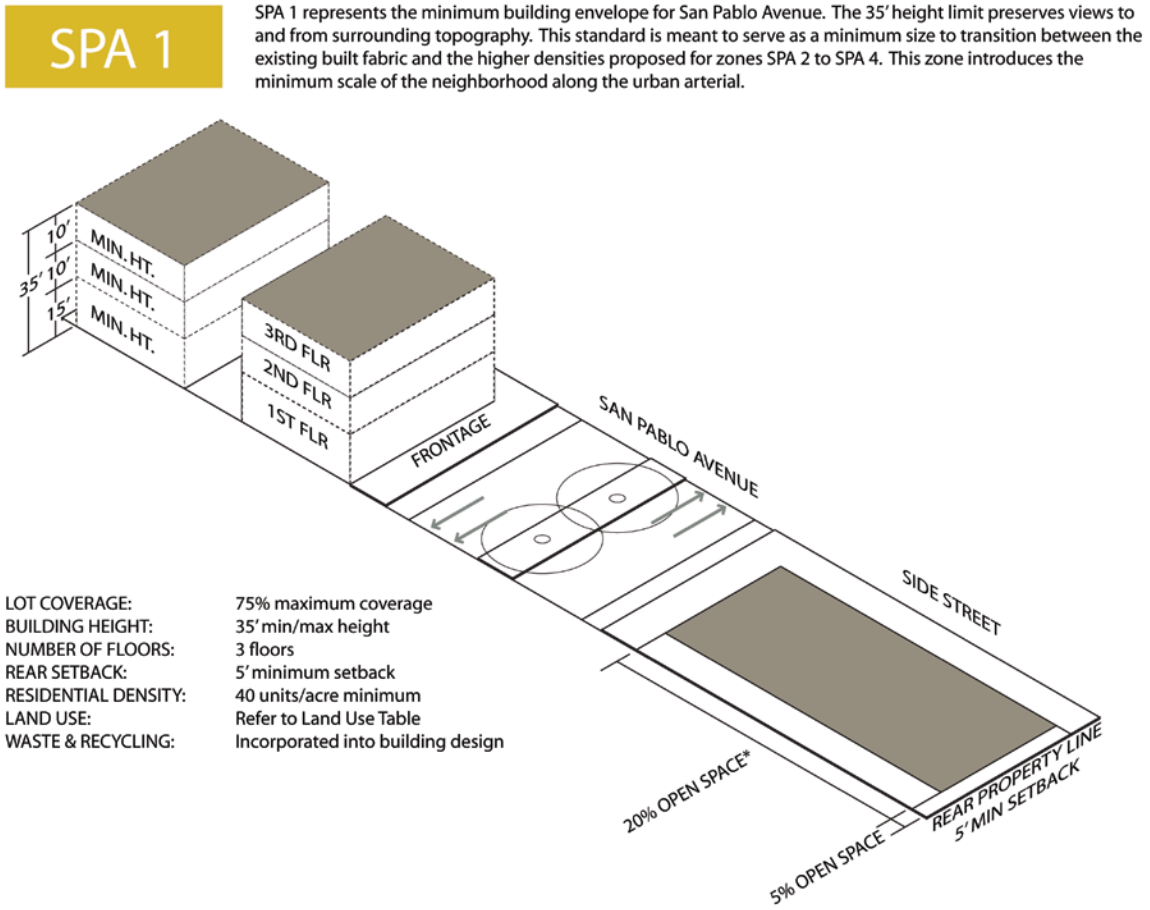
Urban Ecotone Code Development Type SPA 3

Although SPA2 is described as the typical condition, it allows for enough variety of form that it should not produce monotonous or homogenous spaces. It is worth pointing out that the existing fabric contributed significantly to the design of this code, so that the transformation of San Pablo Avenue could retain aspects of its cultural landscape, including the buildings. The code accepts and celebrates the fact that not all of the parcels will transform to the code's delineation. Even if only half of the parcels with parking lots fronting San Pablo Avenue were to be redeveloped according to the Urban Ecotone Code, the transformation could shift perceptions from an auto-oriented strip, to an ecotone destination for pedestrians.



Urban Ecotone Code Development Type SPA 2

SPA1 was created as a special condition to protect viewsheds to and from existing topography. The height limit is based on existing buildings, feedback from citizens participating in the San Pablo Avenue Specific Plan and meetings with members of the Richmond Annex Neighborhood Association. The development types SPA1-3 all address transitions at the rear property line to the adjacent single-family detached residential land use to mitigate for sunlight and noise issues. The numerous accessory dwelling units present in these residential areas discounted privacy issues concerning views into back yards, since they are a shared space. SPA4 areas are self-contained districts enclosed by infrastructure landscapes. New blocks and parcels have to be designated in SPA4 and are not adjacent to residential land uses, so the rear property conditions reflect this difference.



Urban Ecotone Code Development Type SPA 1

If this regulating plan were to be applied to the entire corridor, there would need to be at least one more development type: a higher intensity type for downtown Oakland, and perhaps another one to address the small scale of the towns to the north along San Pablo Bay. One might speculate that six development types along 25 miles would be incredibly homogenous, but this is where the fragmented nature of the corridor works its magic! Along the 25 miles, there are nine cities and four unincorporated towns, lots of rolling topography, and at least 15 creek drainages that cross the avenue. The landscape sets up a rhythm with the high/low views and the intermittent riparian right-of-ways, while communities create melodies with their buildings and streetscapes. Perceptually, it creates a continuous corridor, albeit pieced together incrementally.

Cross-section, street-view and code test site locations.

LOOKING NORTH LOOKING SOUTH

A-A

B-B

C-C

D-D

Street views E-E

LOOKING NORTH LOOKING SOUTH

F-F

G-G

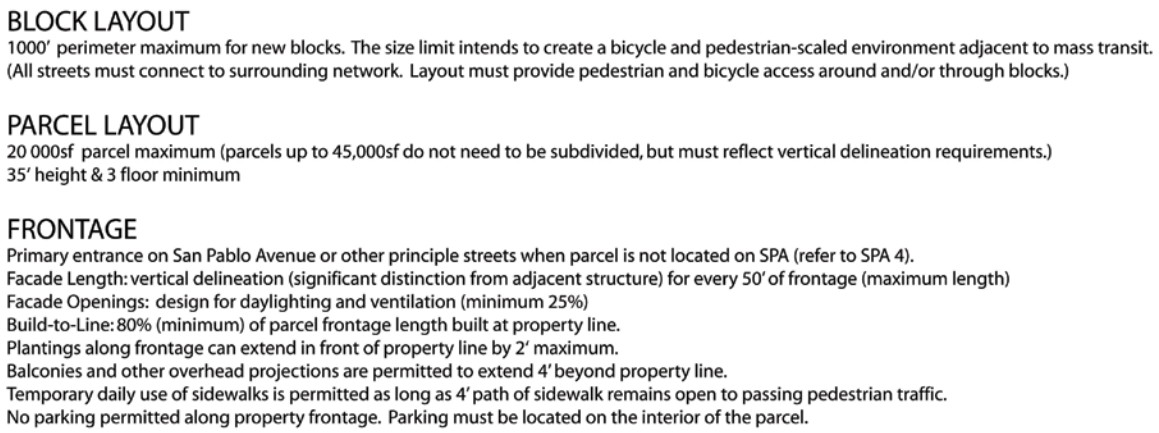
H-H

I-I

Street views J-J

Block Layout

Block layout is necessary for parcels in SPA4 and other areas, such as large strip malls over 50,000 square feet. The perimeter maximum of 1000 feet is about half the length of other blocks along the 5-mile strip, but the size is meant to promote high pedestrian and bicycle connectivity in the transit-oriented areas. As an example, block perimeters in downtown Portland, a very pedestrian-friendly city, are 800 feet in length, or 200 feet square.



Urban Ecotone Code: General Requirements

Parcel Layout

The parcel maximum was intended only for areas where new parcels and blocks needed to be laid out, but all of the code testers with sites over 20,000sf applied it to their site. For parcels along San Pablo Avenue in Alameda County, the average area is 8115sf. For parcels along the avenue in Contra Costa County, the average area is 14,585sf, reflecting the larger number of strip malls and big box retailers mixed in with the historically platted 50'x100' (5000sf) parcel. Parcel size is important as a scale factor in pedestrian comfort. The 5000sf parcel is a pedestrian-scaled parcel, but the development of small parcels is typically hindered by costs due to parking requirements and return on investments percentages. Limiting parcels to 20,000sf in this thesis is a negotiation between the cultural landscape and the economics of development. The code test, which I designed for a portion of SPA4, discusses another concession made for this development type, with respect to block configuration and parcel size.

Frontage

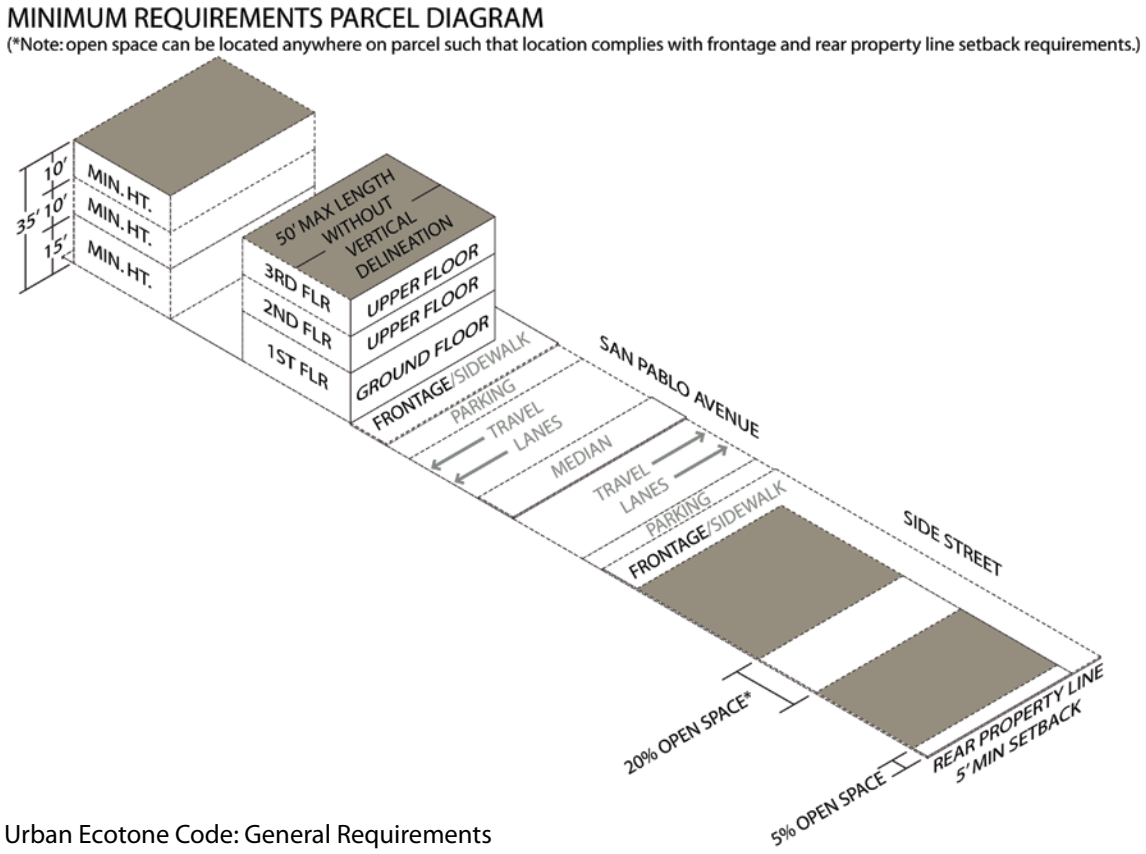
The requirement for a vertical delineation/differentiation every 50 feet of frontage originates from the historic 50-foot parcel delineation, which contributes to the cultural landscape of the corridor. Neoliberal urbanism trends towards parcel assembly for global corporate dollar development. The densities in Asia, upwards of 500 units per acre, can support this scale of development where the street becomes a secondary space, but with densities between 40 and 100 units per acre on San Pablo Avenue, the street remains the primary public space and should be designed to a pedestrian scale (MVRDV 1998).

The frontage requirements assume there are no ground floor residential uses along the avenue. Perhaps this is a mistake… so this standard will require adjustment in the setbacks and so forth, most likely in SPA1 and SPA4. There are many different ways to create a semi-public or transitional zone between the public space of the urban arterial and the private space of ground floor residential. As an example, the neighborhood district Amsterdam Zuid designed by H.P. Berlage employs two common tactics: the raised first floor and the recessed entrance.

Public/Private Transition Zone, Amsterdam Zuid 2009.

Minimum Requirements Diagram

The minimum requirements diagram presents the graphic standard for the development types by illustrating the basic minimum requirement information and the terms. It is essentially the same requirements as SPA1, but the massing is configured differently to show variation.



Urban Ecotone Code: General Requirements

Sustainable Design

The LEED and SSI requirements encompass almost all of the performance standards that support the urban ecotone concept. As a side note, if all of the buildings were to be LEED certified, there would be no smoking allowed within 25 feet of any building on San Pablo Avenue, so smokers would be relegated to the medians. This could be a fun little design project. These performance standards along with the Seattle Green Factor ordinance upon which the vegetation standard was based, represent a sustainable building approach where human and natural ecologies can co-exist in urban conditions. These standards would be incorporated into the municipalities' ordinances, therefore codifying these performance standards into the

landscape. In terms of code administration, projects would need to submit their LEED project registration receipt and a preliminary checklist indicating which level of LEED the project is pursuing. These would be submitted along with the checklist for the administrative review prior to permit approval.

SUSTAINABLE DESIGN

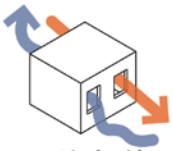
All projects should strive to LEED Silver certification or higher, as well as meet the minimum requirements of the Sustainable Sites Initiative. (refer to www.usgbc.org and www.sustainablesites.org for more information)

ON-SITE ENERGY PRODUCTION

All projects should maximize their on-site energy production potential and incorporate the production methods into the construction. Examples of on-site energy production include, but are not limited to: photo-voltaic panels, solar hot water heaters, small scale wind turbines, small-scale hydro turbines, geo-thermal co-generation, bio-mass co-generation, food crop produciton and human power.

HOUSE THE PEOPLE

All housing units should be through-floor units or have a minimum of two exposures to promote passive ventilation.



FEED THE PEOPLE

For parcels with residential uses, food crop space should be identified within the open space/vegetated area. For example, to provide food for 10% of the daily diet of an adult for 1 year requires 190 sf.

Urban Ecotone Code: General Requirements

On-Site Energy Production

Returning to the concept of legibility, the more evident the production of energy is reflected in the landscape, the greater consciousness about energy production will exist, ie. reducing fossil fuel dependence. This educative philosophy is what fortified the urban creek day-lighting movement, so why can't it do the same for other natural factors? On-site energy production reduces the impacts on existing infrastructure and discounts one of the stated cost barriers to infill development. Although the upfront costs of energy generation systems are significant, programs like Berkeley's FIRST program (Financing Initiative for Renewable and Solar Technology) provides incentives for decentralized energy production. The largest potential for district utilities exists in the SPA4 areas, where infrastructure impacts could even reduce adjacent impacts.

House the People

It's a simple idea: passive heating and cooling. In this climate, all a space needs to acclimate to the comfort zone are two exposures for ventilation and access to sunlight and shade. Solar hot water heaters can assist heating requirements through radiant heating, but with climate change, it will only get warmer in the Bay Area. Just say no to the double-loaded corridor! This is the only country in the world where this economically driven building typology dominates the landscape, despite the Mediterranean climate indicators for a more efficient type that relies on passive, cost-free systems.

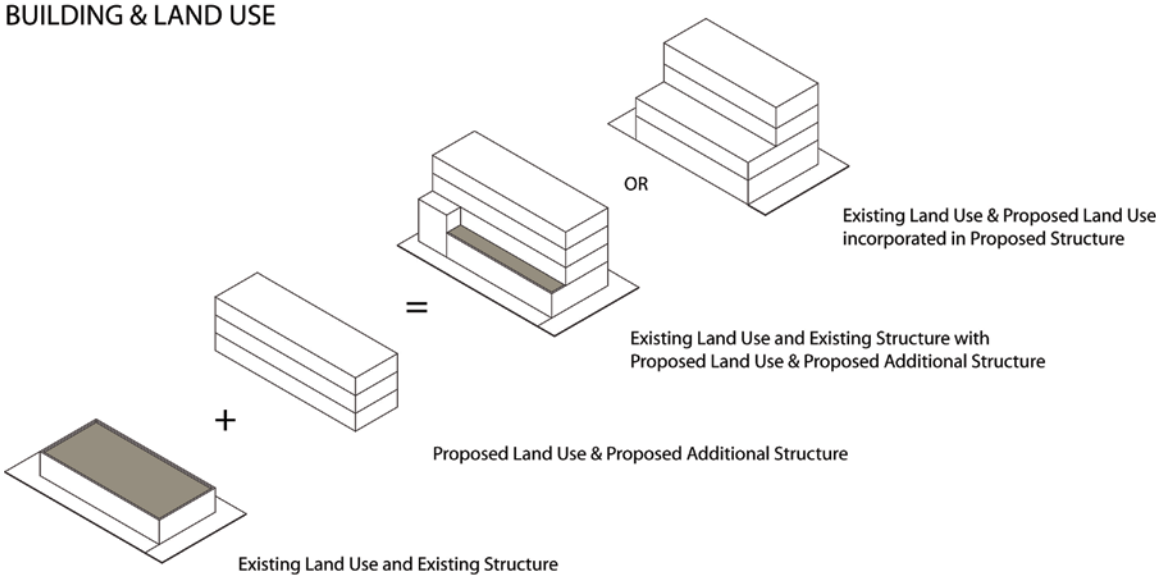
Feed the People

Urban agriculture is all the rage, so why not codify it? Vancouver is doing it! Out of all the re-localization issues, food security seems to be paramount. Not only is local food production an educational landscape, it addresses an environmental justice issue: access to healthy, fresh food. The current economic recession makes the case for codifying space for urban agriculture even more poignant as the food banks are reporting shortages and a 30% increase in demand (New York Times "Newly Poor Swell Lines at Food Banks" February 20, 2009).

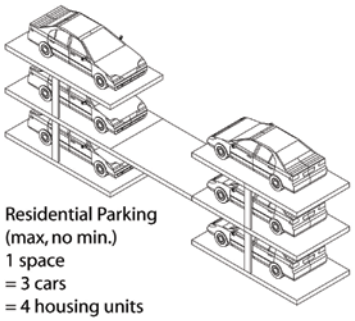
Building & Land Use: Existing and Future

This standard pushes the limits of governance in order to test how existing auto-oriented uses can work with other uses on the same parcel, and to see if reuse of the buildings would be feasible with the increased intensity of use. Obviously, this standard could not be enforced as an ordinance, but similar effects can be produced through historic district overlays or designations, or other incentive programs.

BUILDING & LAND USE



STACKED PARKING



Residential Parking
(max, no min.)
1 space
= 3 cars
= 4 housing units

(Spaces are de-coupled from units, so those not purchased by residents can be rented out to automotive shops who need additional storage. Assume that one space is reserved for car-share.)

On-street parking is factored into ratios for uses other than residential.

STRUCTURED PARKING

District Shared Parking
1 space / 1000 sf for Commercial/Retail
Allowed Types:
tuck-under or podium parking
sub-surface parking structures
structured parking internal to block

OPEN LOT PARK(ING)

Surface parking should only be used when no other parking scheme is feasible. 100% of surface must be incorporated into a stormwater management plan. If parking lots are not used everyday, then an alternative use must be designed as a public open space when there is no parking demand. This requirement also applies to loading areas.

LAND USE

Permitted Use = ■ Secondary Use = □

	Ground Floor	Upper Floors
RESIDENTIAL		
Dwelling Units (40% 2BR, 10% 3BR)	□	■
Hotels & Motels	□	■
Single Resident Occupancy (SRO) (refer to regulating plan for density)	□	■
INSTITUTIONAL		
Religious Facilities	■	□
Schools & Libraries	■	□
Child Care	■	□
RETAIL		
All Retail Uses 10 000sf per parcel; more requires 3sf of another permitted use for 1sf of retail. (No Drive-thrus permitted)	■	□
ARTS & ENTERTAINMENT		
Nighttime Entertainment	■	□
Adult Entertainment		□
Theater	■	□
Movie Theater (3 screens max)	■	□
Galleries and other arts activities	■	□
OFFICE		
Office		■
Medical Office (including Veterinarians)	■	■
INDUSTRIAL/PDR		
Light Manufacturing (includes Green Tech)	■	□
Laboratory (for Green Tech only)		■
Home and Business Service	■	■
Wholesale Sales	■	
Motor Vehicle Repair	■	
Recycling Facilities	■	
Commercial Storage and Distribution (Self storage not permitted)	■	■

(list derived from zoning guide for San Francisco Eastern Neighborhoods Urban Mixed Use Area)

Urban Ecotone Code: General Requirements

Auto-repair in a mixed use building with residential above, Amsterdam 2009.


Auto-repair in a mixed use building with residential above, Rotterdam 2009.

Parking

To make parking scarce on an auto-oriented corridor might kill the businesses or it might make people act more opportunistically. The on-street parking will remain on San Pablo Avenue so there will always be an image of parking associated within the right-of-way. The goal of this code is to remove auto-dominated private parcels which, when combined with the on-street parking, essentially surround the sidewalk pedestrian realm, turning it into an island.

Stacked mechanical parking structures are incredibly efficient at storing cars that are not used on a daily basis, which is a common condition associated with residential land uses. Decoupling the parking from the residential units creates a market for other users to lease the spaces when the demand is not met by the residential uses. This relationship could benefit the auto-oriented businesses that frequently exploit the on-street parking causing strife with their neighboring businesses (surveys and interviews). There are numerous possibilities for stacked mechanical parking structures.

Parking lifts in single-family residences, Amsterdam, 2009.

Parking lift for a single-family house made to look like decking, Amsterdam, 2009.

Parking lifts in muti-family residences are rented out when there is no tenant demand, Berkeley, 2008.

Structured district parking provides a larger amount of parking for areas where there is an increased intensity of commercial uses as found in SPA3 and SPA4. The mixing of diverse land uses implies different schedules of use, which is where a shared-district parking scheme can maximize the use of the spaces. There can still be plenty of parking available along San Pablo Avenue, it just won't be immediately visible and probably not free of charge. The fees for parking can be negotiated with the businesses through validation programs, which provides the incentive for people to learn to use the hidden, structured parking.

The open lot park(ing) standard acknowledges that surface lots are sometimes inevitable, such as loading areas, but that they should contribute to the public realm when vehicles are not sitting in them. Open lots can be used for markets, stormwater infiltration sites with habitat, hard courts for play, and so on. Park(ing) Day, started by the San Francisco design collective Rebar, influenced the formulation of this standard. Park(ing) Day is an annual event that is a self-organizing collective action where individuals transform on-street parking spaces into public spaces for people to generate awareness for the value of public space. The open lot park(ing) standard codifies the collective action of Park(ing) Day into a quotidian event.

Park(ing) Day Event 2008 (Flickr User Justsmartdesign).

Land Use

Almost anything and everything goes; just be sure to mix them together in a way that promotes the sidewalk as an interactive public space. The San Francisco Eastern Neighborhoods Urban Mixed Use zone represents a mix of land uses similar to those on San Pablo Avenue and promotes a pedestrian-based ground floor land use scheme; it was used as a reference for the Urban Ecotone Code land use chart. The dwelling unit size distribution reflects the types of families who live along the corridor in the 5-mile strip. The RHNA numbers presented in the analysis chapter reflect the distribution of the levels of affordability.

Gas stations in Paris do not dominate urban form. 2008.

Gas stations in Paris are convenient without taking up lots of space. 2008.

Riparian & Drainage Areas

The creeks and drainage infrastructure are responsible for conveying all of the stormwater in the East Bay, and all of the stormwater north of Oakland crosses San Pablo Avenue on its way to the Bay, so how could San Pablo Avenue and the connecting infrastructure create a multi-functional infrastructure that improves human and natural ecologies? By adding a visible layer of green infrastructure on the surface there exists the potential to reduce the impacts on the decaying subsurface pipe infrastructure, while adding numerous benefits to the human and natural ecologies in the form of pathway connections and habitat corridors. Again, the issue of legibility that provides an educative landscape, can be a preventive measure for further environmental impacts. The San Francisco Public Utilities Commission's *Stormwater Design Guidelines* and the New York City *High Performance Infrastructure Guidelines* are excellent sources for urban green infrastructure examples. Nature can function well in the urban fabric, if it has room. The aesthetics between the suburban vegetated swale and urban stormwater sidewalk planting are different, but the function can be similar. Putting a secondary stormwater infrastructure on the surface also provides an alternative urban framework to the street grid where the private and public realms can interconnect. The code designates a 100' right-of-way for the green infrastructure above all creek and drainage infrastructure. This is probably too large for the drainage systems, but is an acceptable width for daylit creeks and can be incorporated into the Quimby Act open space requirements for the additional population introduced into the community. The green infrastructure functions can be divided into typologies by the following parameters: position in the watershed – upper, middle, lower; ownership – public or private; and direction of flow – along or across a street or parcel. The design proposals for these conditions are discussed in greater detail in the public realm portion of the code.

RIPARIAN & DRAINAGE AREAS

Open space buffers of a minimum of 100' will surround creeks and drainage infrastructure. Every creek and drainage in the East Bay(north of Oakland) crosses San Pablo Avenue. The goal of this code is to enhance the urban and natural ecotone along the corridor, and to achieve this, the avenue will function literally and figuratively like a giant bio-filtering swale for all water passing across it. Development should use this open space requirement as a public amenity, incorporating projects into this system. The wide buffer facilitates water retention, filtration and infiltration during peak storm events, and otherwise functions as a riparian and bicycle/pedestrian area. The areas not designated as sensitive habitat can be included in the Quimby Act open space calculations. (3-5 acres/1000 people)

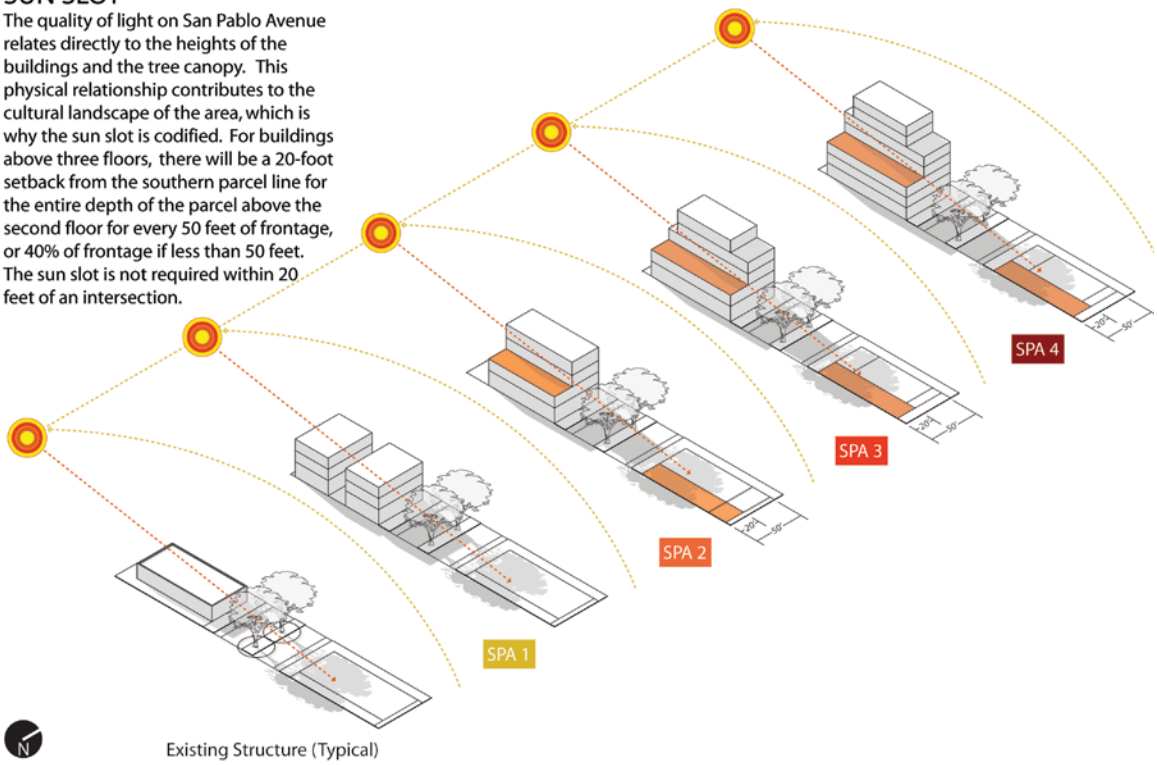
A park along the Promenade Plantee with stormwater infrastructure and riparian habitat that marks a drainage path to the river, Paris 2008.

Sun Slot

This standard addresses the cultural and productive landscape as an ephemeral condition: the sun. Most buildings along San Pablo Avenue are currently 2 storeys in height. The 30 year-old Plane trees in Berkeley are one of the favored elements of San Pablo Avenue (interviews and surveys). The light and microclimate that is produced by the combination of the low buildings and trees is one of the positive characteristics of the avenue. The relatively consistent building height also maximizes the solar exposure for rooftop photovoltaic energy generation. The current zoning allows for at least 4 storeys with a density bonus for affordable housing pushing buildings up an additional storey. If San Pablo Avenue transformed into a 5 storey space overnight, the loss of the amount and quality of light would be significant to the avenue space and the uses behind these buildings. The sun slot standard negotiates between the need for a more intense development and the preservation of the ephemeral qualities, microclimate conditions and energy generation potential that are currently valued on the avenue. The sun slot standard also provides a semi-private open space for residents and food production, facilitates the ventilation and two-exposure standard, and reinforces the 50 foot parcel rhythm through its massing.

SUN SLOT

The quality of light on San Pablo Avenue relates directly to the heights of the buildings and the tree canopy. This physical relationship contributes to the cultural landscape of the area, which is why the sun slot is codified. For buildings above three floors, there will be a 20-foot setback from the southern parcel line for the entire depth of the parcel above the second floor for every 50 feet of frontage, or 40% of frontage if less than 50 feet. The sun slot is not required within 20 feet of an intersection.



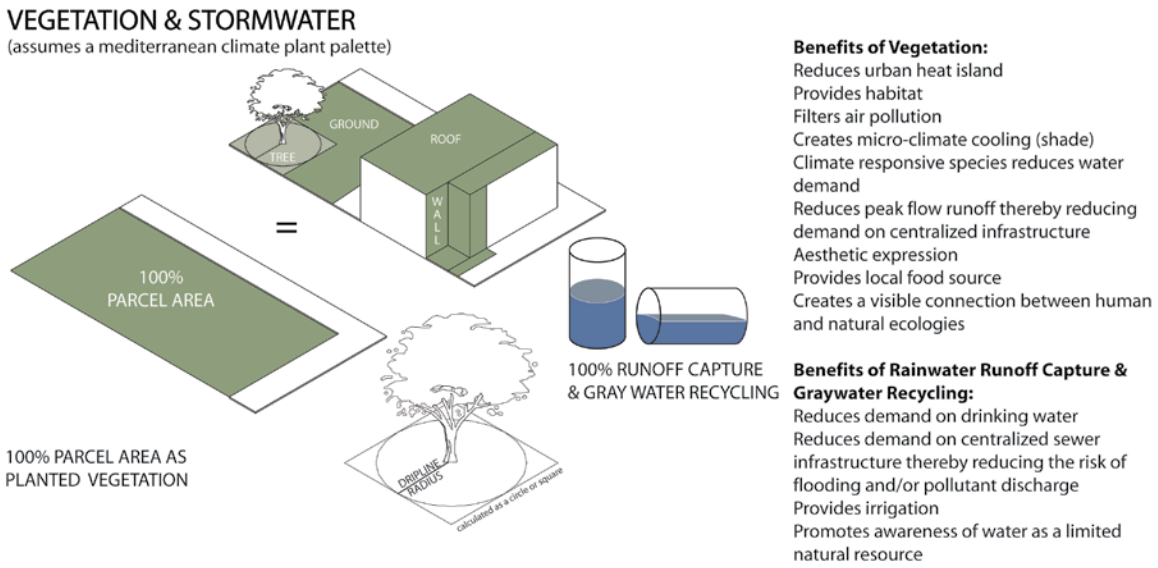
Urban Ecotone Code: General Requirements

This building under construction in early 2009 is located on the southwest corner of Delaware and San Pablo Avenue. (above) If constructed according to the Ecotone Code, it would have two sun slots and a viewshed setback on the 5th floor (below).

Vegetation & Stormwater

The vegetation and stormwater standards are connected for a reason: they are mutually beneficial and when they work together, they produce increasing synergy. These are performance standards that different municipalities have enacted as ordinances and are triggered by building permits. The vegetation standard in the Urban Ecotone Code is a simplified version of the Seattle Green Factor ordinance for their neighborhood commercial streets. From the city's website, "this program is designed to improve the quantity and quality of planted areas while allowing greater flexibility for developers and designers to meet open space requirements" (Seattle Green Factor website). For building permit approval, there must be evidence of a Green Factor score higher than 0.3. The Seattle Green Factor was modeled after the Berlin Biotope Area Factor, which is more demanding of replacing vegetation on a parcel. The vegetation standard in the Urban Ecotone Code, while less prescriptive, is more demanding than either of the existing ordinances.

The stormwater performance standard uses the San Francisco Public Utilities Commission cistern calculator to determine the cistern size for each of the parcels. The cistern is sized to capture 90% or more of the runoff, assuming that a minimum 10% of stormwater will be absorbed through the vegetation. Building gray water will also be stored in the cistern so the 90% capacity will hold enough water to irrigate plants, flush toilets and wash clothes, in addition to any other water demands factored into the spreadsheet. Graywater piping, also known as Purple Pipes for domestic use is not permitted in all municipalities, so this standard requires a policy change in addition to the ordinance. Not only does this standard reduce the impacts on the stormwater infrastructure, it can also save money on utility costs. An article in the San Francisco Examiner explains how a homeowner in the city collects all of the rainwater from her 1000sf rooftop to irrigate her plants, which saves her approximately $200 year in water costs for 12,500 gallons of water (SF Examiner October 9, 2008).



An increase in building density and population has been traditionally associated with an increased demand on centralized water-storm-sewer infrastructure systems. By integrating decentralized infrastructures into development projects, the demand on the centralized systems could potentially be reduced, thus reversing the traditional association between growth and capacity. (The relationship inversion can only occur in urbanized areas where infrastructure systems are already present and at capacity.)

Urban Ecotone Code: General Requirements

Museum Quai Branly façade; the Accenture building in the Tolbiac district of Paris, 2008; Buster Simpson's Belltown cistern (Flickr User Citywalker); Buster Simpson's Water Glass cistern and Water Table sculpture (Flickr User Citywalker).

Open Space by Land Use

Lot coverage maximums address issues of health, safety and access by establishing acceptable minimum standards, but coverage does not differentiate for land use. Multi-family residential uses require more access to light, air and open space than other uses, primarily based on tenement laws established in the 19th Century and expanded upon by later laws (http://ci.columbia.edu/0240s/0243_2/0243_2_s1_2_text.html accessed 20 March 2009).

OPEN SPACE BY LAND USE

Lot **coverage** dictates 10-25% of parcel area to be open (if podium parking is included, coverage calculation is taken above podium).
Open space requirements are determined by **land use,** which includes roof access, by the following calculations:

Residential: 100 sf open space per dwelling unit (public, semi-public or private)

All other uses: 1 sf open space per 100 sf of use (public)

If **coverage** > **land use**, then apply the **coverage** area.

If **land use** > **coverage** , then apply the **land use** area.

Urban Ecotone Code: General Requirements

Development Types: SPA1 to SPA4

The following table presents the existing zoning, densities and allowable building heights for parcels along San Pablo Avenue in Richmond and El Cerrito, and compares them to the four development typologies of the Urban Ecotone Code. The building heights, as mentioned earlier, are similar between the three codes. The Urban Ecotone Code represent heights that include the affordable housing density bonus while the existing zoning codes do not include the additional height, so the difference in size between the existing and proposed codes is not as large as the numbers suggest. The density increases are easily accommodated within the building height limits; this is clearly demonstrated in the following code test results. The key difference between the existing and proposed zoning codes is land use association. The existing codes limit the types of land use, prescribe parking requirements based on singular uses, and separate public and private functions into different code categories. The Urban Ecotone Code does not zone by use, does not prescribe singular use parking requirements, nor does it distinguish between public and private uses in the development realm because these uses can be mixed in a single structure.

Table 6. Existing Zoning Codes and the Urban Ecotone Code, Density and Height Comparisons

City/Code	Zone/Development Type	Dwelling Units/Acre (incentive density)	Height in feet (Conditional Use Permit Height)
El Cerrito	Single-Family Residential	10	35′ (40′) max
	Multi-Family Residential	21-35	35′ max
	Transit Oriented Mixed-Use	35 (70)	35′ (50′) max
	Community Commercial	35 (45)	50′ (65′) max
	Public/ Semi-public	n/a	n/a
	Open Space Parks and Recreation	n/a	n/a
Richmond	Single-Family Low Density Residential	11	35′ max
	Multi-Family Residential	26	35′ max
	Multi-Family High Density Residential	54	45′ max
	General Commercial	34	45′ max
	Regional Commercial	n/a	65′ max
	Community and Regional Recreation	n/a	n/a
Urban Ecotone Code	SPA 1	40 min	35′ min/max
	SPA 2	40 min	35′ min/ 50′max
	SPA 3	60 min	35′ min/ 60′ max
	SPA 4	100 min	35′ min/ 72′ max

Source: San Pablo Avenue Specific Plan Existing Conditions Report p.9

Along with the graphic code, each development type specifies a series of form and performance standards specific to each type. These standards include: maximum lot coverage, maximum height, number of floors, rear setback, sun slot setback, front and rear viewshed setback, residential density, and waste and recycling requirements. Land use is included, but only in reference to the list presented in the common code requirements.

		COMPLIES	DOES NOT COMPLY	N/A
Contributes to Urban and Natural Ecotones		☐	☐	☐
BLOCK LAYOUT				
	1000' Perimeter maximum for new blocks	☐	☐	☐
PARCEL LAYOUT				
	20 000sf parcel maximum	☐	☐	☐
FRONTAGE				
	Primary entrance on SPA or other principle street in SPA 4	☐	☐	☐
	Vertical delineation every 50' of frontage	☐	☐	☐
	Openings designed for daylight and ventilation (25% min)	☐	☐	☐
	80% minimum of façade built to frontage line	☐	☐	☐
	No parking on frontage	☐	☐	☐
SUSTAINABLE DESIGN				
	complies with LEED Silver point level	☐	☐	☐
	complies with Sustainable Sites certification level	☐	☐	☐
ENERGY PRODUCTION				
	maximized on-site energy production	☐	☐	☐
HOUSING AIR QUALITY				
	through-floor or double exposure units	☐	☐	☐
FOOD SECURITY				
	designate food crop space with residential uses	☐	☐	☐
BUILDING REUSE				
	Existing building re-used	☐	☐	☐
	Existing use incorporated into new building	☐	☐	☐
BUILDING LAYOUT				
	maximum coverage not exceeded	☐	☐	☐
	35' height minimum	☐	☐	☐
	maximum height not exceeded	☐	☐	☐
	3 floor minimum	☐	☐	☐
	maximum number of floors not exceeded	☐	☐	☐
	residential density minimum	☐	☐	☐
	sun slot setback	☐	☐	☐
	rear property line setback	☐	☐	☐
	rear viewshed setback	☐	☐	☐
	front viewshed setback	☐	☐	☐
	waste and recycling	☐	☐	☐
PARKING				
	Residential stacked parking	☐	☐	☐
	Structured parking	☐	☐	☐
	Open lot park(ing)	☐	☐	☐
LAND USE				
	Primary uses exceed secondary uses	☐	☐	☐
OPEN SPACE				
	coverage or land use ratio applied	☐	☐	☐
RIPARIAN & DRAINAGE AREAS				
	no building in 100' buffer zone	☐	☐	☐
	project incorporates riparian area into design	☐	☐	☐
VEGETATION				
	100% of parcel area identified as on-site vegetation	☐	☐	☐
STORMWATER MANAGEMENT				
	100% of stormwater remains on site--cistern accomodated	☐	☐	☐

ADDITIONAL COMMENTS HERE: