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Developing Sustainable Urban Food Systems

Encouraging the Development of Urban Alternative Agriculture in the city of Salinas

by Kevin Miller

As the people of Monterey County continue to seek residence in urban areas, the new 'environment' will not be the hills of the Salinas Valley, nor the shores of Big Sur. New spaces of change and conflict over the environment will be cities. Urban farming—the greening of urban spaces by placing ecologically sustainable agriculture in urban areas—will be a necessary component in this new environmentalism

Introduction

Whoever could make two ears of corn, or two blades of grass, to grow upon a spot where only one grew before, would deserve better of mankind, and so more essential service to his country, than the whole race of politicians put together.

-JONATHAN SWIFT, *GULLIVER'S TRAVELS*

In spite of the ongoing loss of agricultural land to development, farming is still the core of the community of Salinas. Surrounded by a growing urban environment and large agribusiness, Salinas is a unique blend of rural and city environments that face new challenges as the population steadily grows and the various issues in running a sprawling city start to surface. The city must prioritize the needs of its communities' social and environmental health by creatively linking its

agricultural heritage with sustainable practices to ensure social justice in the urban environs.

Urban organic farming and gardening is a solution to many different issues. Urban farms absorb CO₂ emissions,¹ minimize impact of storm water runoff on water supplies,² lower the overall price of food,³ and help prevent malnutrition.⁴ The city currently recognizes the importance of organic agriculture in lowering citizen's

¹ Hyun-Kil Jo & Gregory McPherson, "Carbon Storage and Flux in Urban Residential Greenspace," *Journal of Environmental Management* 45 (1995).

² Susanna Tong & Wenli Chen, "Modeling the relationship between land use and surface water quality," *Journal of Environmental Management* (29 April 2002).

³ Ali Saysel, Yaman Barlas, and Orhan Yenigün, "Environmental sustainability in agricultural development project: a systems dynamics approach," *Journal of Environmental Management* 64 (2002).

⁴ Daniel Maxwell, "Does urban agriculture help prevent malnutrition?," *Food Policy* 23, no. 5 (1998).

exposure to dangerous chemicals.⁵ However, arguing for the cause of sustainable agriculture is outside the scope of this brief—I have such a strong conviction in local organic farming that I cannot deliberately argue against them, and shall instead accept their benefit as a given. This is not to say that a garden is the solution to every land use policy. Significant barriers to the development of community agriculture do exist, and it is the purpose of this brief to find solutions to such obstacles.

Urban Farming, CSAs, and Community Gardens

The greening of the city of Salinas through urban farming cannot occur sustainably with only one type of agricultural development. In order to encourage many forms of community support in the cultivation of food, while at the same time supply a sufficient amount of produce, policy must be formulated around a diverse agricultural base. Therefore, I have identified three basic forms of urban farming.

On a small-scale is the ‘community garden,’ a plot of land either owned by the city or surrendered

by a certain landowner/developer so that residents of the surrounding area can grow fresh fruits, vegetables, flowers, and the like. These gardens can be a variety of sizes, but are typically quite small—often less than an acre, sometimes just taking up a lot between buildings or a few reclaimed parking spaces. The purpose of these gardens is not to supply a steady and reliable food source, but to instead provide an open space where children learn about where their food comes from, people can enjoy the shade, and community spaces are created through the use of landscaping and creative plant arrangements.

Harvesting a large amount of nourishing food, on a year-round or seasonal basis, is the community supported agriculture project (CSA).⁶ These are membership-based farms, where people pre-pay for vegetables (thus providing the necessary startup cash for the farmer), and members are involved in the decision making process of the farm. Some CSAs are member owned and operated, while others are farmer-owned and membership

⁵ City of Salinas. *Salinas General Plan Update: Safety Component*, (Salinas: City of, 2002), S-17.

⁶ See Elizabeth Henderson and Robyn Van En, *Sharing the Harvest: A Guide to Community Supported Agriculture* (White River Junction: Chelsea Green Publishing Co., 1999).

participation varies. CSAs can be quite large, and some can even rival commercial farms in land use; however, the use of biointensive agriculture would be necessary to work within the confines of the urban environment.⁷

Another form of large-scale agriculture that can still employ organic/biointensive methods is the ‘urban farm,’ which forgoes the CSA’s organization to instead grow for local distributors or to sell at market. Because of the different agricultural methods for maximizing output and protecting soil fertility, there is little chance that monocropping can occur in these plots. The problem with this method is that there is little opportunity for effective and affordable distribution of organic produce in Monterey county, so these farmers will probably opt for vegetable stands or farmers’ markets to sell their produce.

Often, a policy change can encourage both the small and large-scale

agriculture projects; in these instances, I shall merely refer to ‘urban agriculture.’ While community gardens do not necessarily provide a steady supply of reliable produce, they are still ‘agriculture’ in that they are part of the local food system.

How should the city of Salinas encourage the development of urban community-based organic agriculture?

Urban agriculture has many different forms, and this brief does not discriminate between the ten acre community-supported agriculture program (CSA), and the quarter acre community garden. The overarching goal of this paper is to provide as many avenues for the ‘greening’ of Salinas through the production of affordable, nutritious, and non-toxic edible plants. However, the strength in urban agriculture is in diversity, and policy changes for such practices needs to encourage a wide variety of local food sources if any are to be sustainable economically.

Stakeholders

Salinas has many communities divided along race and class (two concepts which are inseparable in the area). The proximity of large agribusiness

⁷ Biointensive farming is the arrangements of plants so that the farmer can get the most possible organic matter per foot of soil. There are four components necessary for a biointensive farm to work: close spacing of plants so leaves touch one another, companion planting for pest and weed control, composting of all organic matter, and loosening the soil 24” down. From John Jeavons, *How to Grow more Vegetables* (York: Grow Biointensive, 2000).

complicates the power structure of the town in terms of city farming.

Poor Communities

It is the purpose of this brief to seek ways to make organic products more affordable to local communities affected by poverty. In Monterey county, most of the cost of production for organic produce is shipping and distribution. For lettuce, it costs \$1.50 to produce a 24-head crate, while shipping for the same crate is \$5.50.⁸ By providing agriculture in the urban areas, within walking distance of low-income housing, shipping and distribution costs are no longer figured into cost of production and the total cost to the resident is lower. Low-income communities have an interest in preserving a local food system which guarantees healthy foods at lower prices. Also, many CSAs and community gardens are helpful for educating children about the importance of nutrition and about the agricultural process.

Affluent Communities

Affluent communities also stand to benefit from urban agriculture, but for

different reasons than requiring a low-cost source of food. Because economic stability can be linked to educational access, many affluent people are interested in organic agriculture and can see its many health and environmental benefits. This can be seen in the largely middle-class participation in CSAs around the country, as well as in the local farmer's market.

Watershed of Salinas

The Salinas watershed is a definite stakeholder in the city's promotion of urban agriculture. Because of urban agriculture's proximity to residential areas, water supplies can either come from the potable supply or through residential grey water systems. Biointensive farms, especially those which incorporate drip or flood irrigation, are more effective water users because less water is lost to evaporation and misting from sprinklers. Because more land in the urban area is left open for agricultural use, urban farming and saltwater intrusion can slowly replenish aquifers because of less consumption and more introduction to the aquifer.

Agro-Industrial Complex

The idyllic farmer who wakes up with the sun and works the field does not

⁸ Compare to a production cost of \$3.50 and distribution cost of \$1 for conventional farming. County of Monterey, Agricultural Commissioner, "2001 Crop Report," 45.

exist in the conventional farmland of Salinas. The conventional farm requires a team of geneticists, irrigation experts, chemical application diagrams, spray nozzle calibrators, heavy equipment operation, shipping experts, packaging plants, labor contractors, sanitation providers, and a slew of business and licensing operations. The farmer is a business executive who (because of a complex legal and economic system which surrounds agriculture) cannot possibly comprehend every facet of what is going on in his or her land. Instead, like most business executives, the farmer hires sub-contractors like labor and spray contractors who are knowledgeable in their specific area. When one is discussing such small scale issues such as urban agriculture to the farmers of Monterey county, they need to realize that this is no longer the hoe-toting Midwestern icon, but instead a slew business person.

There is a large agro-industrial complex of companies in Monterey County who are devoted to serving large agribusiness, but none of these suppliers or sub contractors are directly involved in organic farming. These are seed, feed, and equipment suppliers, and contracting

companies for pesticide/herbicide application, harvesting, irrigation systems, tillage, and general farm labor. In many cases, the farmer or landowner never touches their crop, but instead uses the vast agriculture subcontracting system of the area to plant, irrigate, inoculate, harvest, and sell their crop. Because organic farming removes some of these processes (like buying new seeds every season, and applying pesticide), many companies might be directly affected by the presence of a large-scale organic agriculture project.

It is not clear; however, how much these agricultural services companies might be affected by the presence of a few urban organic farming projects. In the much larger agricultural scheme of Monterey county, these projects will not have much impact on the services companies. Some of the suggestions in this policy brief will; however, require the cooperation of conventional services companies to mitigate the impact of conventional farming practices on adjacent organic agriculture. Any policies affecting this sector need to involve the service companies and their employees (who

represent the largest number of farm workers in the county).

Landowners

Landowners are disinclined to enjoy urban agriculture because they are able to make more money selling development rights off to builders than lease or sell the land to a farm or CSA. Because there's no one to sell or lease the land to, community gardens have the least incentive. Landowners stand to lose the most financially from urban agriculture; however, the city can step in to mitigate the cost of turning land over to urban agriculture in order to prevent a takings suit. However, landowners are not mere economic functions, and the policy maker must realize that they are people with values that might supersede any private rights they claim to their land.

Decision Makers

The city of Salinas has ultimate jurisdiction in providing services for CSAs and urban farming within their borders. As outlined in the alternative policy conclusions, the state of California has provided for numerous avenues for the cities to take in trying to implement such policies. However, the structure of the local governance in the

city makes it sometimes difficult for poor communities (who stand to benefit from urban agriculture) to make their voices heard.

The Want to Farm

It would be unethical of me, as someone who is not a resident of Salinas to force upon the community the idea of urban agriculture. While I truly believe in the possibilities of such projects, I will not delude myself into thinking that a citywide requirement for such agriculture would be the key for community involvement. To put it another way, no matter how much land, funding, and water one provides, it does not guarantee that people are going to *want* to farm, or if they do, others will *want* to participate as volunteers or buyers. The purpose, then, of this brief is to find ways to support and therefore encourage communities who do want urban agriculture. These policies are therefore designed to be tools that lie around, waiting for a willing group of people to start such projects.

Theoretical Underpinnings

Like Marx's communism,⁹ a spectre is haunting this brief. In the dingy basement of this shining policy house is a group of coconspirators who are meeting around a table. My consistent leanings toward social ecology, anarcho-syndicalism, deep ecology, and—most dreaded of all—anarchism represent a 'hauntology'¹⁰ of any critical approach ecological policy. The problem, however, lies not with these philosophies, but instead with reconciling a lifestyle/theory of opposition while practicing and initiating state power.

New levels and factions of radicalism in the United States have complicated the way we conceptualize our relationship to the environment as a scarce resource, they have constructed multiple 'natures' with different needs and methodological approaches. As an increasingly popular critique of the mainstream environmental movement, I have found social ecology to be an enlightening and exceedingly relevant approach to the environmental question. Social ecology is the belief that systems

of oppression within society are intertwined with environmental domination. Just as there is a link between the racial caste system in America and the problems of poverty in communities of color, there is a correlation between the capitalist system, the state functions, racial and sexual domination, etc. and the natural environment. With this theoretical base, we (as people who care about the environment) cannot achieve environmental sustainability without social justice—and we cannot legislate our way to an environmental utopia while the state is still in power. The methods of social ecology are anarchist in nature, if not by conclusion, because the state is considered a necessary component of social/environmental inequality.

In trying to reconcile these beliefs, I have formulated policy which does not regulate environmental action, but instead focuses on localizing and urbanizing food production, promoting strong community identity, diffusing the power of the nation-state in determining the direction of local food systems, and promoting social justice as a means of ensuring positive and long-term

⁹ "A spectre is haunting Europe—the spectre of Communism." Karl Marx, *Communist Manifesto* (London: Penguin, 1986), 1.

¹⁰ Jacques Derrida, *Spectres of Marx*, tr. Peggy Kamuf (New York: Routledge, 1994).

environmental sustainability. In some ways, these policies are abhorrent to my own beliefs, but they are the best attempt I have made to try to ‘work within the system’ without compromising my values.

Alternative Policy Conclusions

While shaping the future of the urban landscape, cities have a number of policy tools allotted to them by the California Code (fig. 1). By using a variety of policy approaches, sustainable agriculture in Salinas can be assured in a diverse set of communities and ecosystems.

Salinas should encourage urban farming through the use of Transferring Development Rights (TDRs).

TDRs are finicky pseudo-*quid pro quo* measures where a city trades the right to develop one lot in order to protect another. For instance, a landowner might wish to make three houses on a certain lot, but the city would like that lot available for open space or some other project. The city will then give the developer the right to put ten houses somewhere else, and the landowner of the original property sells the right to the receiving property’s owner. According to the California Office of Planning and

Research, a TDR “is a device by which the development potential of a site is severed from its title and made available for transfer to another location. The owner of a site within a transfer area retains property ownership, but not approval to develop. The owner of a site within a receiving area may purchase transferable development rights, allowing a receptor site to be developed at a greater density.”¹¹

The problem with the use of TDRs is the current judicial environment created by *Bernadine Suitum v. Tahoe Regional Planning Agency*.¹²

¹¹ State of California, Office of Planning and Research, *General Plan Guidelines* (Sacramento: State Printing Office, 1987), 78.

¹² *Bernadine Suitum v. Tahoe Regional Planning Agency* (520 U.S. 725; 117 S. Ct. 1659; 137 L. Ed. 2d 980; 1997).

Categories	Instruments
<i>Regulations</i>	<ol style="list-style-type: none"> 1.Laws 2.Licenses/Permits (§65950) 3.Tradable Permits (§65850) 4.Quid pro Quo (§65915)
<i>Voluntary Instruments</i>	<ol style="list-style-type: none"> 1.Information 2.Volunteers & NGOs 3.Technical Assistance
<i>Expenditure</i>	<ol style="list-style-type: none"> 1.Contracting (§5956) 2.Monitoring 3.Investment & Procurement (§54341) 4.Enterprise (§54344) 5.Public Partnerships (§54346.1)
<i>Financial Incentives</i>	<ol style="list-style-type: none"> 1.Pricing 2.Taxes & Charges (§65850 et.sq.) 3.Subsidies & Tax Incentives 4.Grants & Loans (§5900) 5.Rebates and Rewards 6.Vouchers

Figure 1. Policy Instruments for Local Governments & Relevant Section of California Government Code

Under *Suitum*, a landowner sued the planning agency instead of selling her TDR, because she considered regulations concerning development a taking under the fifth and fourteenth amendments. The California courts determined that, since she never tried to sell the TDR in the first case, they couldn't judge whether or not her TDR was in fact a taking.¹³ However, the Supreme Court found that the landowner

¹³ Ibid., 6.

was not justly compensated, while at the same time not touching on the constitutionality of TDRs. Turning to an earlier takings case, *Abbot Laboratories v. Gardner*, the court came to the conclusion that “indeed, to the extent that *Abbott Laboratories* is in any sense instructive in the disposition of the case before us, it cuts directly against the agency: *Suitum* is just as definitively barred from taking any affirmative step to develop her land as the drug companies were bound to take affirmative steps to change their labels. The only discretionary step left to an agency in either situation is enforcement, not determining applicability.”¹⁴ Essentially, the court came to the conclusion that, when TDRs are used, the agency cannot promise that the landowner will receive more money than the TDR is worth in order to fool the landowner into going along with the program. Thus, in the post-*Suitum* world, the local planning agency needs to be careful when assess the value of the TDR market.

TDRs are required to be consistent with the city general plan and other city regulations. The problem then

¹⁴ Ibid., 63.

becomes how to fit a TDR within the scope of preexisting city and judicial boundaries. The City of Salinas general plan already incorporates a policy for the protection of agricultural resources and the minimization of urban growth on agricultural land.¹⁵ The necessary research in identifying areas of the city which have agriculturally productive soils has already been done and the city general plan includes the availability of proper water and drainage systems pursuant to the National Pollutant Discharge Elimination System (NPDES) and the California Regional Water Quality Control Board's (RWQCB) storm water program.¹⁶ As such, the research necessary to locate sites that can support urban agriculture is already done.

A planning agency cannot willy-nilly implement TDRs depending upon what landowners desire developments. There needs to be a consistent and well thought-out plan for how a TDR will be implemented. First, certain sections of Salinas which can support (through soils and water systems) agriculture need to be identified, and (in pursuing the desire

for poor communities to be near urban farms) priority given to areas near high and medium-density residential zones (a sample of what such a map would look like is provided in Map 1). When certain plots of land which fit this criteria come up for development, the planning office works with the landowner to issue a TDR, the land is re-zoned to agriculture, and the landowner is allowed to sell the land to organic farms or CSAs only.¹⁷

There is a good amount of legal precedence for such a program.¹⁸ For instance, in the Sacramento valley, the Tri-Valley Business Council and the Vision 2010 project developed and implemented a TDR program to protect farmland. This included a farmers market/CSA funding program, and the condition that landowners could not transfer land to any other use than agriculture.¹⁹ In *Suitum*, the Supreme Court did uphold the right of planning

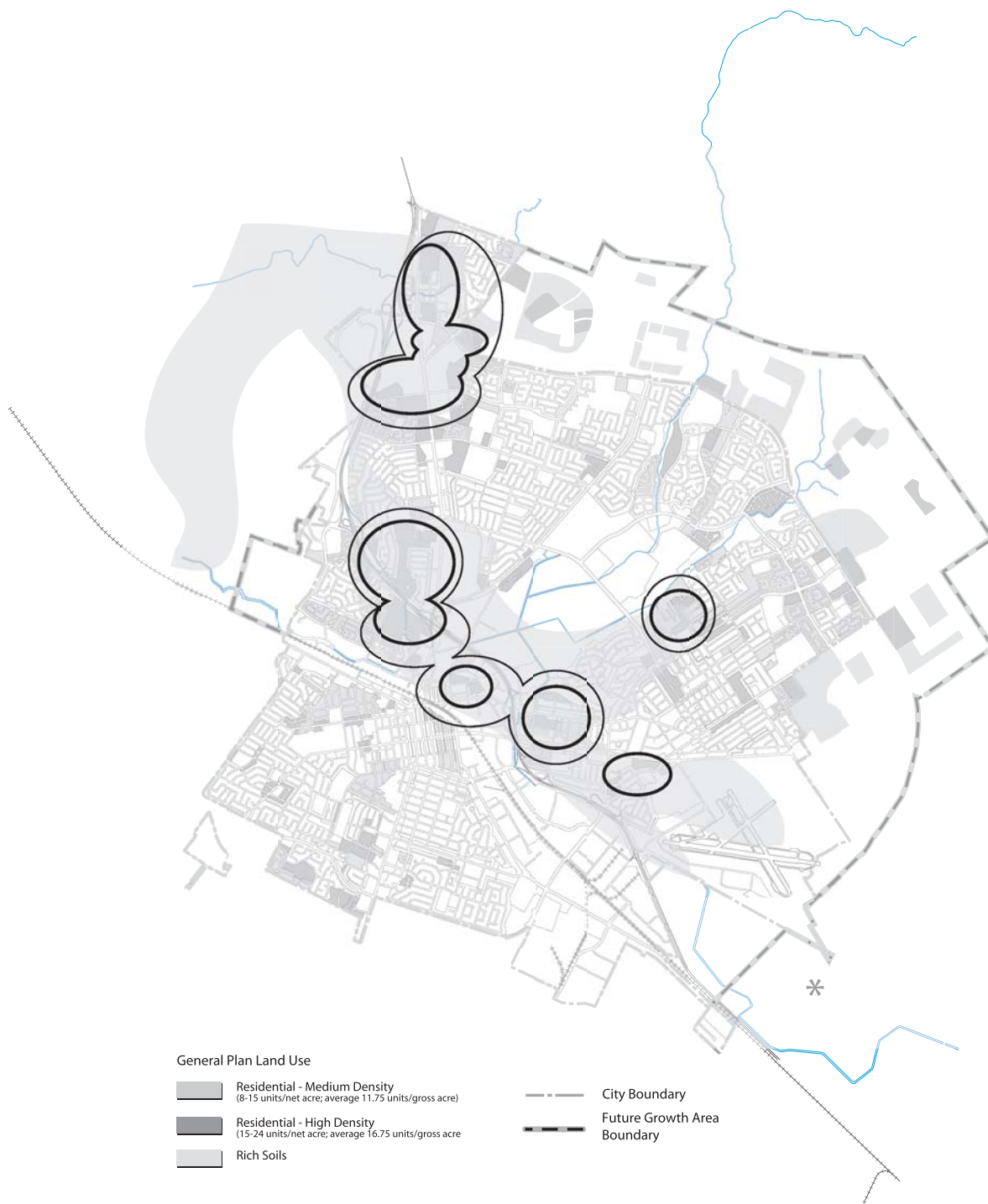
¹⁷ Planning agencies have the authority to approve the transfer of lands, so they can force the landowner to sell to specific people. Whether the landowner cares is another issue, since they probably received more money from the TDR than what the land is worth in the first place. See California Gov't Code §65065.2

¹⁸ See "Purchase of Development Rights may Become a Valuable Farmland Protection Tool" *Law of the Land Review* (November 1997).

¹⁹ Sustainable Communities Leadership Program, *Strategies to Enhance Agriculture In the Tri-Valley Region* (October 200), 10-15.

¹⁵ City of Salinas. *City of Salinas General Plan* (Salinas: City of Salinas, 2002), COS-9.

¹⁶ *Ibid.*, COS-4-5.



Map 1. Sample TDR Priorities Map

agencies are allowed to limit the use of land after a TDR has been implemented.²⁰ Salinas should alter high-density residential (R-H) zoning ordinances to encourage the development of community gardens.

Zoning ordinances are powerful tools to enact positive social change throughout a city while at the same time being relatively protected legally through a large precedent already set by the courts.²¹ As long as the zoning ordinances are consistent with the general plan and are “reasonably related to public welfare,” a city can put many limitations on development (Gov’t Code §65860).

High-density residential (R-H) zoning ordinances are focused on because of the desire to provide services to the poor communities of Salinas. According to current ordinances, R-H zones are specifically for “development of affordable housing,” and must

“provide adequate light, air, privacy and open space for each dwelling unit and protect residents from the harmful effects of excessive noise, population density, traffic congestion and other adverse environmental impacts.”²²

Because these zones are providing affordable housing to low-income communities, and they are required to offset negative environmental impacts, the existing zoning provisions create an appropriate legislative environment to foster urban agriculture. Currently, there are many stipulations in Salinas’ zoning ordinances that involve public or semipublic projects alongside R-H developments. These include schools, parks, daycare, utilities, and cultural institutions. Quite simply, why not community gardens?

Currently, all public uses are only allowed with a conditional use permit, meaning that developers are not automatically allowed to build a park when they are supposed to be providing low-income housing. However, for each ‘dwelling’ (that is, a building with a minimum of 10 apartments), the developer must provide 500 sq. ft. of

²⁰ *Suitum*, 45.

²¹ These were supported by *Associated Home Builders v. City of Livermore* 18 Cal. 3d 582; 557 P.2d 473; 135 Cal. Rptr. 41; (1976); *City of Del Mar v. City of San Diego* Cal. App. 3d 401; 183 Cal. Rptr. 898; 1982 Cal. App. (1982); and *Arnel Development Co. v. City of Costa Mesa* 28 Cal. 3d 511; 620 P.2d 565; 169 Cal. Rptr. 904; (1980). Also, *Taschner v. City Council* 31 Cal. App. 3d 48; 107 Cal. Rptr. 214; (1973) stated that cities can apply zoning regulations across the entire spectrum of zones within reason.

²² City of Salinas. “Municipal Code,” Ch. 37, §44(c & b).

open space, some landscaping around the building, and a number of other semi-public facilities for the residents.²³ In trying to prevent a ‘if you build it they will come’ attitude in the zoning laws, community gardens or agriculture projects cannot be variances in the code, but should instead give residents the power to obtain land for community gardens if they so desire. Due to the size constraint and land ownership issues inherent in this sort of approach, CSAs or Urban Farming projects will not be able to benefit directly from these zoning changes.

In trying to change an already existing development through zoning laws, residents really only have one option: the conditional use permit (CUP). A conditional use permit is often written into the zoning law to allow for flexibility with different types of development. For example, in an area zoned for R-H, a developer must request for a CUP if they wish to build a convalescent hospital.²⁴ In order for such a project to go forward, there must be a discretionary review of the proposal and

it must be approved by the city. The public is allowed to comment and can be a big part of the decision-making process.

This sort of approach does not necessarily require radically new zoning laws, instead it needs just a few adjustments to existing codes in order to work (see Exhibit A for the current R-H zoning codes along with proposed changes). This involves changing the stated intent of R-H zones to be more inline with a sustainable urban environment and adding an extra public use called “Community Garden” with a CUP attached to it for all levels of R-H zoning. There is no need to change the design regulations of these zones because a CUP would preclude zoning design requirements.²⁵

In order to make such a CUP viable, however, it needs to be consistent with pre-existing open space development rules, that is, a community garden CUP cannot force a developer to destroy a housing project (because then there would be less community for the garden!). It is far more desirable for developers to work with residents to

²³ City of Salinas. “Municipal Code,” Ch. 37, §35-46 (under ‘Property Development Regulations’).

²⁴ City of Salinas. “Municipal Code,” Ch. 37, §35-45 (under ‘Public and Semipublic Uses’).

²⁵ *City of Rancho Palos Verdes v. Mark Abrams*, 124 Cal. Rptr. 2d 80 (2002)

provide a garden where there was merely landscaping or turf before. Therefore, under 'Property Development Regulations,' this plan would change "Usable open space per dwelling" to "Usable open or community garden space per dwelling." This change of the zoning laws would be consistent with Salinas Zoning Ordinance Ch. 37, §149 (Landscaping Design Guidelines) which already allows for vegetable gardening (figure 3).

Salinas should offer low-interest loans to start CSA programs.

This sort of option has been used by the Federal government to support farmers in general, as agriculture is more financially viable when there is an initial injection of money to fund seeding, fertilizer, labor, and machinery before the harvest.²⁶ Local agencies have the right to provide loans for activities they wish to see occur, and they already provide loans for developers who fulfill certain criteria in affordable housing or open space protection. Loans are an essential part of starting any mid-scale urban agricultural project, like a CSA,

²⁶ On the federal level, there is the Federal Farm Loan Act, Emergency Farm Mortgage Act, and the Farm Credit Act, (all US Code Title 41, Chapter 1, Section 22).

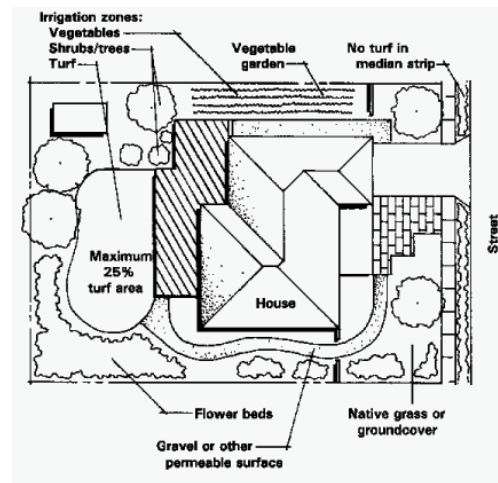


Figure 2: Landscaping design guidelines for R-H zoning in

and the Salinas financial market is so saturated with conventional farming loans that there is no room for funding urban agriculture.²⁷

Cities often offer loans to developers who provide certain services the city would like to see. These often involve higher-risk ventures where private capital is difficult to obtain, but some city officials have given loans for more dubious means.²⁸ Generally, as outlined by California Gov't code §§5000-5394, and understood by the courts in *Rider v. City of San Diego*, a city may adopt a bond or loan fund "any" capital improvement that will

²⁷ Roseland, *Sustainable Communities*, 131.

²⁸ For example, one city attorney was charged with ten counts of criminal financial interest because he had approved loans for businesses he was involved in. *People v. Gnass*, 125 Cal. Rptr. 2d 225 (2002)

provide a "significant public benefit."²⁹ This vague term gives cities a significant amount of wiggle room when deciding where loans should be issued, as long as the procedure for doing so is strictly adhered to. Providing low-interest loans or grants to community programs is already routine in the everyday function of a city.³⁰

Because loans need a group of people who act as an organization or corporation, and since loans by their nature must be paid back, this sort of financial approach to urban agriculture can only help a small number of ventures. Loans would not help people forming community gardens or small-scale urban farming co-ops. However, the initial injection of money is exactly what larger-scale urban farmers and CSAs need to get their feet off the ground, buy or lease some land, and start producing a viable crop so that they can pay back the loan.

There are five things to consider while setting up a loan program: 1) how many loans can be issued at one time (i.e. how big is the budget for the

program); 2) how big should each loan be; 3) what will the interest be; 4) what will the term be; and 5) how can those who would benefit from the program be adequately informed that such a loan is available. There can be no cut and dry answer to these questions, and the city's Finance officer needs to decide on a case-by-case basis what the final figures on these loans will be; however, some general provisions can be made ahead of time to ensure that the farmers or CSAs get a fair break. Many of these suggestions are based upon the Minnesota Sustainable Agriculture Loan Program.

Focusing on land (either renting or buying) should be the first priority of this program. Land can be the largest startup expense of a farming operation. Land is the most cut-and-dry issue for issuing loans, since the applicant can point out plots of land and their cost/rent. Here the program needs to be clear that loans will only be issued where land is adjacent to or within an urban area. A secondary priority of the loan program should be the acquisition of high-cost durable farm equipment and the erection of necessary buildings. Here again the city can make demands

²⁹ *Rider v. City of San Diego* 18 Cal. 4th 1035, 1050-1052, 959 P.2d 347, 77 Cal. Rptr. 2d 189 (1998)

³⁰ For example, the city of Salinas has several loans listed in their FY 01-02 report.

regarding noisy equipment and stressing the importance of a no-chemical farm operation.

Regarding the term of the loan, the city should take into consideration the amount of time necessary to gather up equipment, find members for a CSA, prepare the soil and grow the first crop. Allowing a farm to be financially viable before payments are demanded should be the guiding approach to setting loan terms. By making the Salinas loan program a revolving fund (moneys from paid loans go back to the program again), the loans can be made available for many successive years of sustainable agriculture funding.

Salinas should alter agricultural zoning rules to allow organic farms within agricultural buffer zones.

Under the Salinas General Plan (COS-3.4), areas zoned as agriculture must have a buffer between the farm and any commercial or residential zones so as to minimize conflicts over noise and pesticide use. There is no magic number when deciding the best buffer size around agriculture, and zones range anywhere from 50 to 700 feet in the

county of Monterey.³¹ The buffer size corresponds to adjacent usage; residential zones receive a larger buffer or an actual physical barrier, while industrial zones might require a very small buffer size. Another factor that affects buffer size is pesticide, whereas more toxic chemicals warrant a greater buffer size.

In all instances, the city requires the placement of a 200-foot lot around the perimeter of the agricultural land.³² Monterey County also requires buffers of smaller or larger sizes depending upon chemicals used and the type of adjoining development.³³ The Monterey County LAFCO encourages the placement of “compatible” uses in buffer areas such as strips of parkway, greenhouses, or green belts.³⁴

There are a number of areas in Salinas that are zoned as agriculture and run up against residential areas. The placement of organic farms and CSAs in these long swaths of land would be a

³¹ Monterey County LAFCO, “Agenda item 4,” (July 22, 2002), 3.

³² City of Salinas, Municipal Code, Chapter 37, §26.

³³ Monterey County, Office of the Agricultural Commissioner, “General Permit Conditions Memo for All Growers.”

³⁴ Monterey County LAFCO, *Commission Policies, Agricultural Lands Preservation Policy* §7.

good way to ensure a ‘compatible use’ within a buffer, while at the same time preventing noise and pesticide problems from reaching nearby residents. Organic farmers could instead lease land, which would be normally allowed to essentially go fallow. The rent could be nominal, since the organic farmer is providing a service by supporting the buffer zone.

However, to ensure that such a change in the Salinas ordinances is not abused by landowners, a number of stipulations must be made clear in the buffer rules. It is suggested that the following language be added to Salinas Municipal Code Chapter 37, §28, and be entered as a condition of “Lot” under the Property Development regulations (Ch. 37, §26):

Lots in areas designated as agricultural land, especially those bordering residential or commercial zones, can be rented or leased to individuals or organizations specifically for the cultivation of organic fruits and vegetables (the Farmer). Organic farming is hereby defined as the cultivation of vegetables or fruits consistent with provisions of the California Organic Foods Act, is certified by the Monterey County

Agricultural Commissioners’ Monterey County Certified Organic (MCCO) program, and which uses no pesticides nor heavy machinery.

(a) Owners of said properties cannot themselves use such lots for organic farming, nor can they directly hire or enter into contract with a company or individual for such a purpose.

(b) Composting within the leased area is allowed, provided that the Farmer mitigates the affect of smell on local residents.

(c) The existing agricultural manager work with the Agricultural Commissioner to minimize pollen and chemical drift.

There are a number of issues that need to be addressed, such as pollen drift and the spread of pesticides and herbicides onto the organic farm. In addition to making the above changes to the agricultural zoning ordinances, the city would need to request the help from the Monterey County Agricultural Commissioner’s Certified Organic program. The Agricultural Commissioner is well poised to make suggestions on how to mitigate the

above problems, and already has a working relationship with the farmers of Salinas. A brief summary of current technologies and methods for minimizing drift between adjacent fields is provided in Exhibit B.

Landowners would not be likely to find much interest in this form of change to the zoning, as they already have to forfeit the buffer land anyhow. It would be an added benefit to be able to lease the land and not have to maintain a buffer area. Organic farmers would be able to get lower rent than usual and in some areas piece together a sizeable farm by bordering agricultural zones. This would also be an excellent way for people to rent a small piece of land to farm part-time with very little money. One stated purpose of the Salinas General plan, to find compatibility between “future urban development... and adjacent agricultural use,” would definitely benefit from this plan by maximizing the usage of agricultural land.³⁵

Criteria for Policy Conclusion

Agriculture means the art or science of cultivating the ground; harvesting of

crops; rearing and management of livestock; tillage; husbandry; farming; horticulture; and forestry; the science and art of the production of plants and animals useful to man; and wildlife management.

-MONTEREY COUNTY ZONING ORDINANCE §21.06.010

Selecting appropriate solutions for Salinas’ food systems involves combining academic, legalistic, and social forms of knowledge in order to come up with a workable solution. Below, I have outlined a number of these criteria that I will be applying to each conclusion.

Scientific Criteria

The above quote from the Monterey County ordinances outlines quite remarkably how science will be used in evaluating the policy conclusions. If the community is to be accepted as a shared source of knowledge on the development of urban agriculture, it is difficult to accept scientific modes of comprehension as universal or necessarily overriding. I am pensive towards science because western culture often views the scientist as a source of objectivity—a position of power which has in many ways furthered

³⁵ City of Salinas, *General Plan*, I-4.

social domination or the denial of local/indigenous wisdom.³⁶ Therefore, a policy must view all forms of knowledge as equally important components of the human approach to the world.

However, science should not be ignored, and can often inform policies which are more environmentally sensitive and prevent social conflict. A policy conclusion must therefore fulfill the following criteria, which can be ascertained through the lens of the sciences: 1) it includes the rights of the natural ecosystem to a continued existence; 2) it encourages practiced organic agriculture practices; 3) it allows for flexibility in reaction to soil, water, and air limitations.

Culture & Equity

If Salinas is to be visualized as a food system, that food system is being affected by relationships of power and domination. Social systems define how, when, and where food is grown, distributed, used, and disposed of. The participation of *all* stakeholders (if it is even possible) is not a universal claim to an equitable decision-making process.

Because some stakeholders have a particular position which gives them more power in the local governmental structure and social relationships, a policy must first take into account the fact that stakeholders have a variety of different positionalities which in turn influence each other.

Culture, as I perceive it, is in part a means of resistance to social or environmental domination, and a reaction to such oppression. I would point out that this definition excludes the mainstream consumer ideology of the United States as a 'culture.' Culture is a vast storehouse of knowledge about how to survive in urban areas more sustainably. A policy should not trample on cultural practices of people who are by definition more environmentally equitable.

An effective and equitable policy fulfills the following criteria: 1) it involves all the people who will implement, enforce, and be affected by the policy; 2) it gives people in traditionally disenfranchised political positions more power to voice their concerns; 3) it allows cultural solutions to urban environmental problems to take precedent over policy directives.

³⁶ Gyan Prakash, *Another Reason: Science and the imagination of modern India*, (Princeton: Princeton University Press, 1999), 34-67.

Political Criteria

Everyday life has significant political impacts, and therefore politics encompasses a wide range of activities. At a very abstract level, politics is a set of ideologies that inform how people enact power, or the choice to enact power in any human relationship. Power, in this definition is not by definition 'bad,' but the people and ideas that utilize power can definitely be seen moralistically. Because most of human activity occurs outside the formal structure of the state,³⁷ politics cannot be limited to the actions of legislators and judicators. Instead, the state is a component of a much broader range of human political activity.

The city government of Salinas, as judicators of a tremendous amount of local power, acts politically according to a set of hidden and public transcripts. In order for one of these policy alternatives to become a part of the local government's mission, it needs to pass a number of political litmus tests. The feasibility of a plan is based upon two criteria based upon the aforementioned private/public power relationships in local government: 1) it must be

consistent with existing laws (public); and 2) it must either appease or be too small to be noticed by the various powerful stakeholders in the city government (private).

A local government in California is limited in its actions by California Government Code (§§23000-57550), and the local power structure that maintains and justifies its edicts. However, there can be no real political change if all we take into consideration is feasibility. In the interest of the aforementioned ethical considerations, conclusions need to equalize the power relationships inherent in the local government and between property owners and residents. Also, because my proposed definition of politics excludes the government as a singular political actor, a policy must recognize people outside the formal structure of government as purveyors of political power.³⁸ Communities in a position to resist domination should not be limited

³⁷ Peter Kropotkin, *The Conquest of Bread* (New York: New York University Press, 1972), 55.

³⁸ Michael Hardt, Antonio Negri, *Labor of Dionysus: A critique of the state-form* (Minneapolis, University of Minnesota Press, 2000), 56.

in their methodologies of resistance because of a policy.³⁹

Personal Values

As I have stated before, I have a passion for organic farming. As someone who comes from an agricultural community, and who has seen the results of large-scale corporate agriculture first hand, I see the benefits of organic farming as far outweighing the supposed efficiency of agribusiness. I also am a firm believer in the maintenance and protection of the urban environment. Organic agricultural development in cities needs to be a key component to an energy efficient city of the future.

In Carol Cohn's "Wars, Wimps, and Women,"⁴⁰ she discusses how the language used by defense intellectuals is gendered and raced in such a way that women and people of color are excluded by the language, while the vocabulary for expressing human emotion or expression is non-existent. The argot of policy writing is not unlike these defense workers—it has been developed in such

a way as to make it impossible to think about anti-capitalist movements, critiquing the structure of the nation-state, or fundamentally rearranging the functionalities of private property and wage labor. It is my hope that I can write policy that approaches the accepted modes of policy writing without falling into the trappings of this dominant mode of thought that has developed to specifically keep the power structure in America consistent.

Like writing history, policy is dependent upon the position of those writing it. I would then argue that objectivity is an impossible stance for one to take. The most effective means to 'mitigate' for bias (if, indeed, one sees bias as undesirable) would be to be open about one's position and goals in the policy proposal itself.

Evaluation of Policy Alternatives

Salinas should encourage urban farming through the use of Transferring Development Rights (TDRs).

By overlapping environmental and social concerns, the TDR plan is very effective in identifying key areas where urban farming will be the most effective from both an environmental and social

³⁹ Chela Sandoval, *Methodologies of the Oppressed* (Minneapolis, University of Minnesota Press, 2000), 58-63.

⁴⁰ Carol Cohn, "Wars, Wimps, and Women." in *Gendering War Talk*. ed. Miriam Cooke and Angela Woollacott (Princeton, New Jersey: Princeton University Press, 1993).

standpoint. Because of the limits on the sale of sending land, organic agriculture can be implemented in areas where it can do the most good while at the same time not spread harmful chemicals and pollens into the surrounding community. From a scientific standpoint, this policy plan seems solid due to its method for identifying target areas and openness to different types of organic practices.

Because there is a preexisting practice of TDRs in the city, it is really up to the city of Salinas to find equitable means to go about involving the community and landowners. While this policy is specifically written to in many ways disregard private property as a right which overrides other needs, the element of landowner consideration needs to be addressed properly if the rest of the community is not going to be dragged into a bitter property rights dispute. TDRs, as a relatively closed process between the planning office and landowner, do very little to involve disenfranchised communities. While the wording of a TDR policy might be more open to those who would traditionally not have a say, the enforcement of such a policy is by definition exclusionary of people who are not landowners or city

bureaucrats. There are serious problems with the current TDR laws in California that not only involve the very top-down process between the city and landowner, as was the case in *Suitum*. Community members and neighbors cannot involve themselves in the process that, as in the case of this specific policy conclusion, can impact a significant amount of people outside the landowner's social circle. This is not an issue of lazy city planners, it is instead the functioning of TDR laws themselves.

TDRs always face strong opposition when a landlord doesn't feel that it is necessary to work with the program and instead wish to develop their own property. As such, this project is the least politically feasible in implementation because it directly correlates with a taking of some rights from those with some of the most political access: land owners.

Salinas should alter high-density residential (R-H) zoning ordinances to encourage the development of community gardens.

As a small agricultural development, community gardens are effective directly and indirectly on the environment and members of the community. Due to their scale, gardens are not very productive;

however, they do create mini ecosystems within the urban environment for birds, insects, and small mammals which one would be hard-pressed to find on a few acres of turf. For these reasons, community gardens are responsible uses of the land, and are flexible enough under the CUP plan to be quite responsive to the soil, water, and air limitations of the area.

As a focused policy, the R-H zoning ordinances give a good amount of state power to low-income residents, but it does so at the expense of flexibility. There is a well-defined process for undertaking CUPs, and in the end it's up to the planning office to decide how best to hand over open space to residents for a garden. At the same time, this conclusion allows people to circumvent the typical unequal power relationship between resident and landlord. Gardens also provide a conduit for developing stronger social relationships to the land.

As a policy that encroaches a bit further into the development rights of R-H landowners, this zoning ordinance would perhaps face some opposition. However, since the community garden would be considered an 'open space'

under the existing 500 sq. ft. per dwelling rule, there is no change in the weight or consequence of existing ordinances. The zoning rules of Salinas are already extremely strict (as exhibit A shows), and are stringently enforced. In short, a community garden rule has a much smaller impact than the 'mixed façade' or other design rules.

Salinas should offer low-interest loans to start CSA programs.

Loan programs provide a good environmental regulation by limiting the loan purchases to certain lands. Because the loan is primarily concerned with placing agriculture within urban settings, this conclusion can encourage the development of CO₂ sumps and drainage areas in the city environment,. However, this policy places more importance over the placement of farms due to the social concerns rather than environmental ones, which might make implementing an effective farm development more difficult. This policy is scientifically stable, but there is still too little regulation finding the best land for the job.

Like TDR policies, these loans have the potential to be either extremely equitable, or poorly executed depending

upon the way the city bureaucrats approach the loan program. These loans can be quite efficient in ‘leveling the playing field’ between small-scale urban farms and the corporate food system by providing startup money which would be otherwise unavailable. Because the loans are somewhat flexible in terms of how the money will be used, the CSA or farmer can find creative and cultural agricultural solutions which would not be possible without a well-implemented infusion of cash.

As a well-understood practice, and one that does not encourage much ‘taking’ from anything but the city coffers (an act few people can muster opposition to), loans are a very politically feasible action. Because it would be a revolving fund, and one which would not involve too much money, the city’s ability to bear the financial burden would hardly be in question.

Salinas should alter agricultural zoning rules to allow organic farms within agricultural buffer zones.

There are several crucial scientific problems with this policy suggestion that need to be addressed. Buffer zones around conventional agriculture have a

number of potential hazards to organic farming that must be addressed: pollen drift, existing chemical contamination of the soil, and spreading of agricultural chemicals. While it would be the job of the Agricultural Commissioner under this policy decision to find ways around such issues, a decision cannot be reached without consulting good agricultural science. Some methods of creating an adequate space for organic agriculture in buffers is discussed in Evidence B.

Buffer zones are too often seen as “waste land,” barraged with chemicals and volunteer GMOs. This policy conclusion sees the land as a necessary member of the ecosystem that has been needlessly dumped on, because existing policy found it easier to put a fence around the problems of drift rather than find ways to prevent such problems in the first place. As such, the scientific criteria apply very well to this conclusion: it utilizes land in a respectful way; it uses advanced but widely implemented technologies, and it gives the buffer farmer and landowner a tremendous amount of flexibility depending upon the size of the buffer, wind variables, etc.

Buffer farms have a tremendous amount of promise in terms of feasibility because it recognizes and allows for the free exercise of private property. Landowners can see an economic gain in leasing otherwise useless land, and organic farmers can use buffer zones as a cheap source of land with rich soils. This project can also establish good working relationships between bio-intensive organic farmers and their contemporary counterparts, perhaps helping both in sharing knowledge and information—while at the same time staving off some of the stigmas of organic agriculture.

Recommendations

To “play by the rules” of the environmental game means that the natural world, including oppressed people, always loses something piece by piece until everything is lost in the end. As long as liberal environmentalism is structured around the social status quo, property rights always prevail over public rights and power always prevails over powerlessness.

-MURRAY BOOKCHIN

In trying to ‘level the playing field’ for organic farmers in Salinas, two big issues must be addressed: the inability to secure startup funds, and a lack of available and cheap land. It is recommended that the city use two policy approaches to encourage organic urban farming: low interest loans, and buffer zone agriculture.

Both of these policy approaches are politically feasible and definitely within the scope of the city’s power (there are currently no tight judicial constrictions on zoning and funding policies). They fit within the power dynamics and landownership relationships of the city quite well and do not present a problem in excluding all the necessary stakeholders (with one exception, which shall be explained later). Low-interest loans are proven

policy practices that achieve good results and can be self-sufficient as a revolving fund to continue supporting sustainable agricultural practices for decades to come. The buffer farms are both ingenious ways to use what would normally be considered waste land, provide a great benefit as barriers to chemicals for the growing urban population of Salinas, and are great ways to further dialog between conventional and organic farmers. As Salinas becomes more urbanized, buffers might be the only land available to urban farmers.

The agro-industrial system of the Salinas Valley operates on a completely different economic level than small-scale local farmers. There is no possibility for organic farmers of Salinas to overthrow the supermarket aisles with a consistent product. Therefore, as the farms are in different markets (and therefore are not competitors), selling the concept of buffer farms should be rather easy. The conventional agriculture community of Monterey County also enjoys a sizeable financial system, which sustains their activities (often in the form of large corporations who support the planting activities of their subsidiaries), and therefore cannot be threatened by a few

low-interest loans that the city offers. The real contention of buffer farming is the requirements to minimize chemical drift—something that will need to be worked out with the various sub-contractors of the local agriculture industry.

This brief has been, for myself, an experiment in anarchist policy writing—it is an attempt to use the legislation of the state to undo some of its powers over local food systems. I wish to promote urban agriculture through these policies because it in the end supports communal property, it breaks down barriers between neighbors, it involves people in their food systems. Just as cities are the new frontier of environmental change, communities and people need to be the new catalyst for environmental policy.

Exhibit A*Proposed Revised R-H Zoning**Regulations (alterations are in italics)**Sec. 37-44. Specific purposes.*

In addition to the general purposes listed in Division 37-1: General provisions, the specific purposes of the high-density residential district regulations are to:

- (a) Provide appropriately located areas for high density multiple-family dwelling units consistent with the general plan and with standards of public health and safety established by this code;
- (b) Provide adequate light, air, privacy and open space for each dwelling unit and protect residents from the harmful affects of excessive noise, population density, traffic congestion and other adverse environmental impacts;
- (c) *Allow for residents to turn unused open space into community garden projects;*
- (d) Promote development of affordable housing by providing a density bonus for projects in which a portion of the dwellings are affordable to qualifying households;

- (e) Achieve design compatibility through the use of site development standards;
- (f) Protect adjoining low density residential districts from excessive noise or loss of sun, light, quiet and privacy resulting from proximity to multifamily dwellings;
- (g) Provide sites for public and semipublic land uses needed to complement residential development or requiring a residential environment; and
- (h) Ensure the provision of public services and facilities needed to accommodate planned population densities.

The additional purposes of each R-H district are as follows:

R-H-3.6. To provide for high density multifamily dwelling units where the maximum density including density bonus is fifteen dwelling units per net acre.

R-H-2.3. To provide for high-density multifamily dwelling units where the maximum density including density bonus

R-H DISTRICT (High Density Residential) USE CLASSIFICATIONS		P	Permitted	
		CUP	Conditional use permit	
		PUD	Planned unit development permit	
		SPR	Site plan review	
	R-H-3.6	R-H-2.3	R-H-1.9	Additional Use Regulations
Residential Uses				
Family day care homes:				
Large	SPR	SPR	SPR	(3)
Small	P	P	P	(6)
Home occupations	P	P	P	(2)
Interim housing	CUP	CUP	CUP	(6)
Manufactured housing	P	P	P	
Mobilehome parks	CUP	CUP	CUP	(4)
Multifamily dwellings	SPR	SPR	SPR	
Planned unit developments	PUD	PUD	PUD	(5)
Residential care facilities	P	P	P	(6)
Residential service facilities	CUP	CUP	CUP	
Second dwellings	CUP	CUP	CUP	(9)
Single-family dwellings	P	P	P	
Public and Semipublic Uses				
Convalescent hospitals	CUP	CUP	CUP	
Cultural institutions	CUP	CUP	CUP	
Day care center	CUP	CUP	CUP	
Park and recreation facilities	CUP	CUP	CUP	
Public safety facilities	CUP	CUP	CUP	
Religious assembly	CUP	CUP	CUP	
Schools, public/private	CUP	CUP	CUP	
Telecommunications facilities, major	NP	NP	NP	
Telecommunications facilities, minor	CUP	CUP	CUP	(11)
Utilities, major	CUP	CUP	CUP	(8)
<i>Community Gardens</i>	<i>P</i>	<i>P</i>	<i>P</i>	
Accessory Structures and Uses				
Animals, domestic	SPR	SPR	SPR	(7), (10)
Utilities, minor	P	P	P	(1)
Temporary Uses				
	P	P	P	(8)

R-H DISTRICT: PROPERTY DEVELOPMENT REGULATIONS

	R-H-3.6	R-H-2.3	R-H-1.9	Additional Regula- tions
Lot size (sq. ft.)	7,200	7,200	7,200	(A)(B)(C)
Lot area per unit (sq. ft.):				
Less than 6,000	6,000	6,000	6,000	(A)
6,000 and over	3,600	2,300	1,900	
With density bonus	2,900	1,800	1,500	(D)(E)
Lot width (ft.)	75	75	75	
Corner lots	80	80	80	

R-H DISTRICT: PROPERTY DEVELOPMENT REGULATIONS

	R-H-3.6	R-H-2.3	R-H-1.9	Additional Regula tions
Lot depth (ft.)	100	100	100	
Lot frontage (ft.)	35	35	35	
Yards:				
Front (ft.)	20	20	20	(F)(G)
Side (ft. per story)	10	10	10	(F)
Corner side (ft.)	20	20	20	(F)(J)
Rear (ft. per story)	10	10	10	(F)

R-H DISTRICT: PROPERTY DEVELOPMENT REGULATIONS

	R-H-3.6	R-H-2.3	R-H-1.9	Additional Regula tions
Bedrooms per unit (percent of total units):				(I)
3 or more bedrooms	20	20	20	
4 or more bedrooms	10	10	10	
Distance between structures (ft.)	10	10	10	(H)
Driveway length (ft. from sidewalk)	23	23	23	(L)
Maximum height (ft.)	30	30	30	(K)
Maximum nonresidential FAR	0.3	0.3	0.3	(P)
Usable open space per				

dwelling (sq. ft.)	500	500	500	(M)
<i>Community Gardens</i>	<i>See Section 37-49: Residential Community Garden.</i>			
Single-family dwellings	(O)			
Landscaping	See Section 37-148: Landscaping and irrigation.			
Fences and walls	(N)			
Off-street parking and loading	See Division 37-18: Off-street parking and loading regulations.			
Driveway and corner visibility	See Section 37-181: Driveway and corner visibility.			
Signs	See Division 37-19: Signs.			
Outdoor facilities	See Section 37-153: Outdoor facilities.			
Accessory structures and uses	See Section 37-137: Accessory structures and uses.			
Screening of mechanical equipment equipment.	See Section 37-160: Screening of mechanical equipment.			
Swimming pools, spas and hot tubs tubs.	See Section 37-163: Swimming pools, spas and hot tubs.			
Recycling and solid waste disposal	See Section 37-157: Recycling and solid waste disposal regulations.			

R-H DISTRICT: PROPERTY DEVELOPMENT REGULATIONS

	R-H-3.6	R-H-2.3	R-H-1.9	Additional Regula tions
Underground utilities	See Section 37-165: Underground utilities.			
Performance standards	See Section 37-154: Performance standards.			
Planned unit developments	See Division 26: Planned unit development permits.			
Nonconforming uses and structures structures.	See Division 37-20: Nonconforming uses and structures.			
Recreational vehicles, prohibited prohibited vehicles districts.	See Section 37-156: Recreational vehicles, vehicles and equipment parking and storage in R districts.			
Condominium conversions	See Section 37-142: Condominium conversions.			
Vehicle trip reduction	See Section 37-165.1: Vehicle trip reduction.			

is twenty-four dwelling units per net acre.

R-H-1.9. To provide for high-density multifamily dwelling units in the central city where the maximum density including density bonus is twenty-eight dwelling units per net acre. (Ord. No. 2200 (NCS).)

Sec. 37-49. Residential
Community Gardens (Proposed Section)

After a public review by the planning commission, residents of R-H developments are permitted to use the 500sq. ft. of open space per dwelling for the purposes of a community garden or

(c)

agricultural program provided that the garden:

- (a) is open to the public in compliance with other entry standards under Sec. 37-45
- (b) does not use pesticides or herbicides which are known to the State of California to cause serious health problems. Compliance with this ruling is consistent with zoning enforcement.

Exhibit B

Technologies for minimizing pollen and chemical drift between adjacent fields.

Pollen drift

Pollen drift is the spreading of genetic material from genetically modified (GMO) crops to their organic counterpart. This can be potentially damaging for the organic farmer, since their crop cannot be certified if there is a presence of GMOs. This policy suggests a number of methods to reduce the effects of pollen drift that can be used in different combinations depending upon the makeup of the land and nearby conventional agriculture: hybrid maturity and crop selection.

Hybrid Maturity

Genetically modified crops are often developed to mature at a consistent time, allowing the conventional farmer the luxury to harvest the entire crop at the same stage of growth. The nearby organic farmer can use this knowledge to her advantage by planting crops that could be affected by pollen drift after the flowering stage of the conventional crop, or even planting before the conventional farmer so harvest time comes earlier than conventional flowering. This is not a fool-proof method, but it is a well-

documented practice.⁴¹ It should be noted that this method requires a good amount of communication between the conventional and organic farmer.

Crop Selection

Many studies on the co-mingling of organic and conventional agriculture still assume that the organic farmer is following many conventional practices such as mono-crop row planting. It is assumed that, in order to make a farm financially viable without a single bulk buyer or distributor, a CSA or local urban farmer needs to grow a variety of vegetables and fruits. Quite simply, a farmer needs to diversify their product so they aren't trying to sell twelve tons of cabbage at their local farmer's market, or persuade people to pay \$20 a week for fifteen pounds of celery. In many ways, an urban organic farm needs to be as diverse as people's diets.

Because of this diversity, an organic farmer can easily prevent pollen drift by not planting the same crops as their conventional neighbor. Since many

⁴¹ Purdue University Agroecology Project, "Minimizing Pollen Drift & Comingling of GMO Corn;" Maohua Ma, Sanna Tarmi, and Juha Helenius, "Revisiting the Species—area relationship in a semi-natural habitat: floral richness in agricultural buffer zones in Finland," *Agriculture Ecosystems & Environment* 89 (2002): 137-148.

organic farmers provide a wide variety of heritage-variety crops that differ from the conventional offerings, crop selection can be an easy method to prevent pollen-drift without much economic impact. For example, some 107,000 acres of conventional farmland in Monterey County is dedicated to iceberg lettuce,⁴² variety of green which is very common in supermarkets around the world. The buffer organic farmer can plant a much greater variety of leafy greens on her farm which increases her profitability and allows her to provide for the local niche market for heritage or rare greens: dinosaur kale, bright-lights chard, baby catalina spinach, and garden mesclun lettuce.

Chemical Drift

Many GMO crops are specifically developed to be resistant to herbicides which would kill their organic cousins. Therefore, the presence of these chemicals on nearby conventional farms should be a big issue to organic farmers. Spray or drift of chemicals is banned from organic certification, as stated in Cal. Health Code §110825: “No food

⁴² Monterey County, Agricultural Commissioner’s Office, “2001 Crop Report: Vegetable Crops.”

that contains any prohibited material residue as a result of spray drift or any other contamination beyond the control of the producer, handler, processor, or retailer, may be sold as organic.” However, all is not lost, current practices exist to prevent chemical drift: spray techniques, physical barriers,

Spray Techniques

In many ways, spray techniques can drastically cut down on the amount of chemical drift. Application by helicopter can lead to consistently high levels of pesticide presence up to 30 meters away from the crops.⁴³ Aircraft application is also quite ineffective in preventing drift, as drift can occur up to 300 meters away from the crops.⁴⁴ Clearly, air distribution of chemicals is not an effective means to minimize drift. However, there are a number of regulations in Monterey County that prevent the use of helicopter or airplane applications near residential zones, so air distribution is not much of a concern to this policy.

⁴³ R. C. Robinson, et. al. “Drift Control and Buffer Zones for Helicopter Spraying of Bracken,” *Agriculture Ecosystems & Environment* 79 (2000): 215-231.

⁴⁴ Ian Craig, Nicholas Woods, and Gary Dorr, “A Simple Guide to Predicting Aircraft Spray Drift,” *Crop Protection* 17, no. 6 (1998): 475-482.

There are a number of technologies available to minimize drift caused by on-ground application of chemicals. The simplest and one of the most effective methods is the implementation of a double-foil shield (fig. 1). These shields, which are made from sheet metal and plastic, are inexpensive ways to minimize drift.⁴⁵ The type of nozzle also drastically affects drift, specifically through affecting the flow rate and droplet sizes. Currently, the best nozzle technology for minimizing drift is D-C-Trate, twin-fluid nozzles.⁴⁶ Aside from shields and nozzles, there are also issues with boom spraying, which is a very common form of application involving a trailer towed by tractor that sprays directly on the ground. Studies have found that boom spray drift is drastically better over air application (the drift goes no farther than 10 meters);⁴⁷ however, in my research I have found no literature that studied

⁴⁵ H. E. Ozkan, et. al. "Shields to Reduce Spray Drift," *Journal of Agricultural Engineering Resources* 67 (1997): 311-322.

⁴⁶ J.H. Combella, N.M. Western, and R.G. Richardson, "A comparison of the drift potential of a novel twin fluid nozzle with conventional low volume flat fan nozzles with using a range of adjuvants," *Crop Protection* 15, no. 2 (1996), 147-152.

⁴⁷ Holterman, H. J. et. al., "Modelling spray drift from boom sprayers," *Computers and Electronics in Agriculture* 19 (1997), 1-22.

boom spraying with nozzle and shield technologies.

Physical Barriers

Because buffer zones differ in size depending upon the type and amount of pesticide/herbicide application, physical barriers can be adopted to catch most of off-site ag. chemicals. For example, researchers at Ohio State found that evergreens are highly effective air filters for wandering sprays.⁴⁸ In the Netherlands, and soon in Australia, farmers are required to plant windbreaks to prevent the distribution of spray.

Impacted Soil

Even with the aforementioned methods for minimizing future impacts of conventional agricultural practices, the soil in buffer zones is still relatively useless for organic farming because the soil is full of chemicals and vegetation

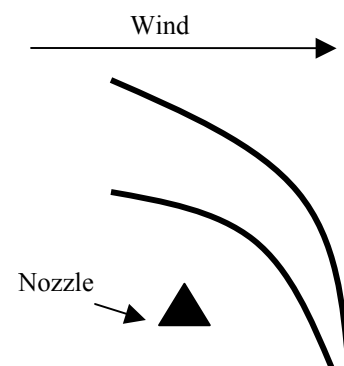


Fig. 1. Double-foil spray shield

soil in buffer zones is still relatively useless for organic farming because the soil is full of chemicals and vegetation

⁴⁸ Pam Frost, "Evergreens help block spread of pesticide from crop fields," *Quadnet* (Nov. 1999).

effected by GMO cross-pollination. Under the California Organic Foods Act of 1990, organic crops can only be grown after the soil has not been affected by conventional agricultural agents for three years, and this waiting period is considered given and acceptable in long-term agricultural planning. For the purposes of this policy, many brownfield remediation methods can be used to return buffer soil to a state suitable for organic agriculture. However, the conventional farmer needs to first work with the community to find ways to stop his or her impact on the buffer zone. 