Finding Room to Grow:
Tracking Vacant Properties in America's Cities

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Abstract

Vacant lands and abandoned structures represent opportunities for redevelopment and recovery in many of our city neighborhoods. The reuse of urban vacant land can bring higher densities to the urban core, while helping to curb urban sprawl by reducing the demand for development in suburban greenfields. Information regarding abandoned properties is crucial for effective planning for redevelopment. Unfortunately, information regarding quantities and locations of these properties in U.S. cities is patchy and inconsistent from city to city.

After a brief history of vacant land, this paper focuses on a survey sent out to 239 U.S. cities (102 responded) in an effort to understand the extent to which cities track vacant land and abandoned structures. For cities that do track vacant lands and abandoned structures, questions explored methodology, technology, costs, time commitments, use of information and the resources needed to improve tracking. For cities that do not track this information, questions probed the barriers to tracking, technological capabilities, resources and funding.

The vacant property inventory gives cities the ability to locate specific sites for potential infill development; develop citywide abatement strategies; dispose of vacant land through land banks and other public procedures; and prevent decay through code enforcement. Approximately one half all responding cities do not formally track vacant land, while just over two-thirds of responding cities do not track abandoned structures. The major barrier to conducting inventories appears to be the costs of staffing and technology. A national inventory-funding program could assist cities with overcoming these cost barriers.

Origins of Urban Vacant Land

The exodus of the American populace from the inner city to the suburbs is well documented in urban studies literature. In *Comeback Cities*, Paul Grogan and Tony Proscio describe the middle-class migration from cities as "the great population hemorrhage of the last half of the twentieth century."[1] Government subsidies encouraged new road construction and an unprecedented suburban housing boom, which made the migration affordable for the middle class. Industry soon followed, and so began a self-sustaining cycle that attracted even more families, more roads, and more jobs. The suburbs offered the middle class detached homes, low taxes, well-funded schools, and racial homogeneity. On the other hand, cities became trapped in a reverse cycle. The loss of middle-class tax dollars forced cities to raise taxes to cover growing municipal expenses. High taxes in turn drove more people out of the city. Badly neglected city neighborhoods paid the price with failing schools, crime, and a concentration of poverty. The

negative consequences of this cycle are common sites in the inner city today: boarded up homes, abandoned shops, unattended vacant lots, and brownfields. [2]

Government's role

All levels of government have participated in subsidizing the exodus from cities that has lead to current abandoned property issues. The federal government's housing, transportation, and urban policies provided powerful incentives to move out to suburbs. Additionally, local governments manipulated exclusionary zoning which relegate "undesirable" elements to the city.

Housing. Federal housing policy directly subsidized the migration to the suburbs. Two of the most prominent examples are the FHA mortgage insurance program and VA home mortgage program. The FHA mortgage insurance system (Section 203 of the National Housing Act) created in 1934 dramatically reduced the down payment necessary for a family to purchase a mortgage while at same time guaranteed banks almost full repayment in the event of foreclosure.[3] Strict construction and design standards combined with the requirement that all neighborhoods remain "homogeneous (segregated) ensured that most FHA loans would be made for homes in the suburbs."[4] In addition, VA home mortgages (under the GI Bill) further insulated banks from losses by guaranteeing up to 60 percent of the value of the loan. In the event of foreclosure, banks only needed to recoup 40 percent of the loan by selling off the foreclosed property. These programs made home lending a safe and profitable practice for financial institutions. With cheap land available for development in the suburbs, developers quickly gravitated to this safe and profitable market.[5] In *Divided Highways,* Tom Lewis describes the effect these loan programs meant for middle-class America:

> Suddenly, young men and women whose parents were Irish, Italian and Jewish immigrants, and those whose parents had migrated from farms in the South to factories and mills in the North, people who had a grade school education and grown up in city apartments and played in city streets-suddenly could realize the American dream: a plot of land, a house, privacy, independence.[6]

As of 1991, these two programs accounted for more than 32 million single-family home loans, a vast majority in the suburbs.[7]

The mortgage interest deduction reinforces the federal government's emphasis on suburban single-family homes.[8] The deduction disproportionately favors suburban dwellers by rewarding purchasers of the largest, most expensive homes with the greatest tax savings. These types of homes are most often found in the suburbs on large single lots. "In 1993, households with incomes over $100,000 (about 5 percent of the population) received nearly 40% of the housing subsidy."[9] In essence, the deduction eases the burden on suburban single-family homeowners, while those in the inner city are often left out of the process. To compound matters the federal government prioritizes the mortgage interest deduction over other tax expenditure programs. Approximately 53 percent of all federal housing tax expenditures are committed to the mortgage interest deduction, compared to only 3 percent that are committed to the low income tax credit.[10]

Urban Renewal. The federal urban renewal program that ran from 1949 into the early 1980s sought to redevelop aging cities by clearing "slums and blight" from neighborhoods using billions of dollars in direct subsidies. Although well intentioned, urban renewal programs often destroyed the heart and character of the very neighborhoods they were trying to save. The "federal bulldozer" demolished or split in half poor neighborhoods to make way for interstate highways, apartment buildings, parking garages and other civic projects.[11] Robert Caro, in *The Power Broker* details the futile opposition of neighborhood residents to Robert Moses's placement of a one-mile stretch of the Cross-Bronx Expressway through their neighborhood. Despite fierce opposition, Moses was able to force over 1500 occupants out of their neighborhood using everything short of brute force to remove them.[12] Monolithic high-rise

apartments (soon to be known as "the projects") took the place of mixed-income urban neighborhoods. Even during the height of urban renewal, Jane Jacobs recognized:

> Nowadays [1961], relatively few people enter low-income projects by choice; rather, they have been thrown out of their previous neighborhoods to make way for "urban renewal" or highways and, especially if they are colored and therefore are subject to housing discrimination.[13]

The forced relocation of low-income residents to the projects concentrated the extremely poor and created havens for crime and drugs, which served to further drive out white middle-class residents from the inner core.

Transportation. Arguably the most important federal subsidy was creation of the interstate highway system by the Federal Aid Highway Act of 1956. Using revenue from a national fuel tax, the act guaranteed that the federal government would pay 90 percent of the highway costs with states and local governments paying the rest. Such easy money quickly prompted states to develop intricate highway plans for all types of cities. While originally billed as a highway system *between* cities, over half of the $652 billion spent on highways went to building over 22,000 miles of highways *within* cities. [14] When road building became the focus of national transportation policy, improvements in urban public transportation were largely ignored leading to further decay of the inner city environment. New roads coupled with the popularity of the automobile opened up millions of acres of land to sprawling fringe development. [15]

Local governments. Exclusionary zoning preserves homogeneity and excludes "undesirables" including objectionable industries, LULUs, and "unwanted" ethnic/racial groups. Cities are forced to absorb these unwanted elements into society. Kenneth Jackson explains the impact of zoning in *Crabgrass Frontier*:

> In actuality zoning was a device to keep poor people and obnoxious industries out of affluent areas. And in time it also became a cudgel to whack the central city…While zoning provided a way for suburban areas to become secure enclaves for the well to do, it forced the city to provide economic facilities for the whole area and homes for people the suburbs refused to admit. Simply put, land-use restriction tended to protect residential interests in the suburbs and commercial

interests in the cities…zoning became a way for suburbs to pirate from the city its only desirable functions and residents. Suburban governments became like so many residential hotels, fighting for the upper-income trade while trying to force the deadbeats to go elsewhere.[16]

Changing markets and changing attitudes

The Industrial Revolution transformed American cities into economic powerhouses. Heavy industry attracted waves of new immigrants looking for work. It also brought choking pollution and congestion. In the minds of many, the city became a dirty, unhealthy, disease-ridden place to live. The wealthy soon escaped to lavishly developed areas located on the isolated fringe of the city. Often featuring ostentatious estates, elaborate landscaping, and nearby rail connections to downtown, the streetcar suburbs showcased as the stomping grounds of the wealthy. Living in detached homes with manicured lawns became symbol of wealth and status.[17] James Howard Kunstler captures the influential role of the first streetcar suburbs in his book, *The Geography of Nowhere*:

> By 1915, the romantic suburb…was a fixture on the fringe of most American cities and had attained its high-water mark as *the* accepted version of the Good Life. In places like Shaker Heights, Ohio, and Brookline, Massachusetts…the fortunate few could enjoy the dream of an achieved Arcadia completely insulated from the industrial economy that made it possible. It was an artificial way of life in an inorganic community that pretended above all other virtues to be "natural." It drew wealth out of the cities and dedicated that wealth to private pleasure-seeking, returning little civic amenity. It was nice while it lasted, but it didn't last long. Its own popularity killed it.[18]

During the Great Depression, cities became even more notorious for their deplorable conditions: congestion, polio and other diseases, substandard housing and growing slums. For many, the haunting images of the Depression city would forever change the attitude toward city living. By the outbreak of WWII, the clean, safe countryside of the suburbs was firmly entrenched in the middle-class psyche as *the* place to live. During the war itself, city infrastructure continued to crumble as government neglected upkeep resulting in a severe

housing shortage.[19] Postwar housing policy (FHA, VA loans, etc) aimed to address this shortage, but focused primarily on single-family housing.

Armed with a combination of subsidized VA mortgages and the new style of cheap mass-produced homes, returning WWII veterans had the opportunity to make this dream a reality. Developers like William Levitt took advantage of cheap suburban land and brought the production assembly line to the suburban home market. Government financing allowed veterans to purchase a home in Levittown for just $52 per month combined mortgage and tax payment. Economic classes previously shut out of the suburban market, particularly blue-collar workers and young married couples, could now join the migration.[20] In fact, many times this monthly mortgage payment was cheaper than apartment rental rates in the city.[21]   Kunstler poignantly notes, "The American Dream of a cottage on its own sacred plot of earth was finally the *only* rational choice."[22]

With money saved on the mortgage and low property taxes, middle-class families were now able to purchase amenities such as household appliances, television sets, and automobiles. This new consumerist ethic served as exciting draw for families, especially after suffering through the long hard years of depression and war. In addition, the suburbs offered high quality municipal services, well-funded public schools, and a chance for privacy. In comparison to most city dwellers that faced deteriorating schools, high tax rates, and poor municipal services. In short, the new suburbanites were living the good life.[23]

Racial politics also played a substantial role in the middle class migration. Rural southern blacks in search of work migrated from the South to Northeastern and Midwestern cities in search of industrial jobs. Often poor and uneducated they were ill equipped to improve city properties or neighborhoods. In fact, the South's share of blacks dropped from historical

levels of 80 percent to 53 percent by 1940.[24] As black families moved into city neighborhoods,

white families who could afford it, left immediately. This mass exodus came to known as "white

flight," and it continued until in some cities downtowns were virtually devoid of white families.

For example, from 1950 to 1980, downtown Detroit shifted from 23 percent to 64 percent

African-American.[25] This phenomenon was not limited only to northern cities. Atlanta lost 42

percent of its white residents during the same time period. By 1984, black residents represented

67 percent of Atlanta's population compared to 50 percent just 14 years earlier.[26] Moreover,

black families that could afford to move out of the inner city were forced to stay because most

suburban developers would not sell to them. FHA also made it a practice to not back home loans

in predominantly black neighborhoods in a process known as "red-lining".[27] In St. Louis, during

the 1960s, 84,000 suburban homes received federal mortgage aid, but only 1 percent of them

where purchased by black families.[28]

<h3 style="text-align:center">Consequences of Disinvestment</h3>

The migration to the urban edge was so fast that by 1960, more people would live in

suburbs than cities.[29]   By 1990, industrial cities like Pittsburgh, Cleveland, and Buffalo each

had lost nearly 40 percent of their populations.[30] Meanwhile, sprawl expanded rapidly out into

the metropolitan fringe.   In *Land Use Law and Society*, Rutherford Platt notes, "Land area

within metropolitan units [MSAs] has risen from 207,000 square miles in 1950 (6 percent of the

United States) to over 650,000 square miles (19 percent) in 1992."[31] Even in fast growing

Sunbelt cities, suburban growth is the rule. Table 1 shows the population change in metropolitan

areas in both the central city and suburbs:

Table 1: Population Change in Selected Metropolitan Areas, 1960-1990

	Metropolitan Area	Central City	Suburbs
	Change in Population 1960-90	*Change in Population 1960-90*	*Change in Population 1960-90*
North			
New York CMSA	11.1%	-5.9%	26.8%
Philadelphia CMSA	15.1%	-20.8%	37.9%
Boston CMSA	19.3%	-17.6%	28.5%
Pittsburgh CMSA	-12.9%	-38.8%	-5.0%
Midwest			
Chicago CMSA	16.3%	-21.6%	56.0%
Cleveland CMSA	1.1%	-42.3%	21.3%
Detroit CMSA	10.6%	-38.4%	42.4%
Minneapolis-St. Paul CMSA	52.9%	-19.5%	123.5%
St. Louis CMSA	13.0%	-47.1%	45.2%
Cincinnati CMSA	18.9%	-27.6%	43.2%
Milwaukee CMSA	13.2%	-15.3%	44.0%
Kansas City CMSA	30.3%	-8.6%	55.9%
South			
Washington CMSA	77.2%	-20.6%	128.8%
Dallas-Fort Worth MSA	108.3%	40.5%	257.8%
Houston CMSA	136.4%	73.9%	228.8%
Miami CMSA	151.8%	22.8%	190.0%
Atlanta CMSA	127.2%	-19.1%	220.7%
Baltimore CMSA	30.9%	-21.6%	86.8%
Tampa-St. Petersburg CMSA	152.3%	-3.7%	325.0%
West			
Los Angeles CMSA	87.5%	40.6%	109.4%
San Francisco-Oakland CMSA	68.0%	-1.1%	97.3%
Seattle CMSA	79.3%	-7.4%	134.1%
San Diego MSA	141.9%	93.7%	201.7%
Phoenix MSA	219.9%	123.9%	407.4%
Denver CMSA	97.9%	-5.4%	213.4%

Adapted from Urban Vacant Land: Issues and Recommendations. 1995. Philadelphia: The Pennsylvania Horticultural Society, p. 16.

As vast numbers of families moved away, cities lost critical tax dollars. Forced to cover a shrinking tax base, cities raised taxes, which in turn, propelled more residents to leave. At the same time, immigrant poor populations skyrocketed, demanding higher municipal services and welfare. It was impossible to for cities to keep pace, and infrastructure paid the price.[32] Inevitably, large businesses moved out to accommodate the new suburban workforce removing

skilled labor from the city. For example, Minneapolis lost twenty different plant headquarters between 1967 and 1976.[33] In many cases, manufacturing moved to lower wage environments such as Sunbelt cities (more likely to their suburban areas) or even abroad. By 1987, New York, Chicago, Philadelphia and Detroit each lost over half of their manufacturing jobs.[34] The drastic reduction in work, combined with failing schools and poor transportation, created extraordinarily high unemployment rates in the inner city. Poverty at such a large scale drives away important business that not only employs residents, but also provides important goods and services.[35]

The negative cycle of urban decay devastates neighborhoods, which become plagued with vacant lots and abandoned homes. Demand for middle-class homes collapsed, and non-resident landlords refused to provide the necessary upkeep. Homes soon fell into disrepair and became derelict and dangerous. Companies left behind vacant factories and bombed out buildings, some of them brownfields. Retail establishments and small businesses, unable to make ends meet, closed up shop leaving shopping centers entirely empty.[36]

The Pennsylvania Horticultural Society study, *Urban Vacant Land: Issues and Recommendations* gives a succinct description of the problems associated with urban vacant land:

> For one thing, vacant, unkempt lots are eyesores. They make neighborhoods look desolate and forsaken diminishing the quality of life for residents and signaling to outsiders that a community is in decline…Unattended properties often collect rubbish and become breeding grounds for rodents and other vermin. Some especially those that have been used for industrial purposes, contain toxic wastes that can leach into streams and groundwater and pose threats to children playing nearby. Abandoned buildings can be fire hazards and sites for drug trafficking and other criminal activities.[37]

These problems spill out into adjoining neighborhoods spreading the cycle of decline and further disinvestment. Vacant land forces city governments to deal with loss in revenue from tax delinquent properties. Already strapped for cash, cities must create expensive demolition and maintenance programs to systematically eliminate abandoned structures.[38] After the demolition,

cities are left with thousands of vacant lots. Detroit demolished 16,450 abandoned homes over the past 6 years which cost the city over $104 million.[39] In 1994, Philadelphia spent in excess of $9 million on nuisance abatement, boarding buildings, and demolition.[40]

The burdens of central city disinvestment extend beyond the city borders. Unchecked growth in suburban population forces us to deal with consequences of urban sprawl. New roads opened up countless acres of wetlands, forests, and farmland for automobile dependent development. Haphazard planning has lead to drastic increases in driving resulting in traffic, safety concerns, poor water quality from increased runoff, and additional air pollution from car exhaust. Fragmentation of the landscape threatens wildlife survival.[41] Furthermore, sprawl disrupts community structure by isolating neighbors in car-oriented developments, and contributes to racial and class segregation through exclusionary zoning.[42]

Tracking Vacant Land

Looking at the information presented so far, one sees a pretty dim prognosis for America's cities, but the news is not all bad. No longer seen as a public nuisance, urban vacant land is now being considered a public resource. The focus on transforming vacant lands from blighted properties to productive urban facilities such as mixed-use housing and commercial, parks, and community gardens, reflects a new attitude taking hold in cities. Redevelopment of vacant land rejuvenates distressed neighborhoods; increases tax roles; reduces crime and violence; and can help lure people back to the inner city.[43]

Currently, greenfield development occupies a sizeable competitive advantage over infill development projects. Barriers exist across a wide range of political, financial and social strata. Some of these barriers include land assembly and infrastructure costs, condemnation issues,

finding skilled developers, zoning and building codes, dealing in public-private partnerships, resistance from local residents, and political patronage.[44]

The first step to breaking down these barriers is collecting reliable information on vacant lots and abandoned structures within a city. Without dependable information on urban vacant land it is impossible for a city to coordinate a systemic response. A reliable inventory provides the backbone for infill planning by providing essential information regarding lot ownership, tax liens, size and condition of any structures, parcel history, and more. Moreover, the inventory needs to be accessible and useable by both public and private decision makers.[45] A recent study performed by Michael Pagano and Ann Bowman, attempted to quantify amounts of vacant lands and abandoned structures in U.S. cities. They discovered that many cities do not track vacant land or abandoned structures.[46] Among cities that track vacant properties, methodology and technology differ from place to place. The irregularity of this information suggests that priority to track vacant land differs from city to city. This study aims to further evaluate the capacity of cities to inventory vacant lands and abandoned structures.

Study Methods

A questionnaire was created to explore the extent to which vacant lands are being tracked in the 239 U.S. cities with populations over 100,000 people (Census 2000). For cities that do track vacant lands and abandoned structures, questions explored methodology, technology, costs, time commitments, use of information and the resources needed to improve tracking. For cities that do not track this information, questions probe the barriers to tracking, technological capabilities, resources and funding. While no formal definition of vacant land exists, respondents were given a guideline definition to minimize disparities. The definition read:

> Vacant land- publicly or privately owned land that is unused, abandoned, or supports abandoned, derelict, boarded up, partially destroyed or razed structures. This land serves little productive or

positive function and may be considered a public nuisance. Vacant land does not
include designated open space / parks and agricultural land**.**

No definition for abandoned structures was given. Most questions were open ended to allow for
as much explanation and freedom as possible. The survey targeted city officials, usually, but not
always, the planning director.   In an effort to obtain a reasonable response rate, all cities were
contacted by telephone prior to receiving the survey. Participants were given the option of
responding over electronic or regular mail. Cities also received follow-up phone calls and e-
mails to bolster participation. In a few instances surveys were taken over the telephone.

Results and Discussion

Surveys were received in the summer and fall of 2001 from 102 cities yielding, a
response rate of 42.7 percent. The location of the responding cities roughly parallels the
geographic spread of U.S. cities with populations of 100,000 or more: 6.9 percent from the
Northeastern Census region (compared 10.5 percent in the U.S.); 11.8 percent from the Midwest
(compared to 18.4 percent); 39.2 percent from the South (compared to 32.2 percent); and 42.0
percent from the West (compared to 38.9%). Likewise, the population size of responding cities
closely mirrors the total spread of cities: 72.5 percent of responding cities had populations
between 100,000 and 250,000 people (compared to 72.0 percent); 18.6 percent had populations
between 250,000 and 750,000 people (compared to 22.6%); and 8.8 percent had populations
above 750,000 people (compared to 5.4 percent).

Cities that track urban vacant land.

54 cities (52.9 percent) reported they formally track vacant land on a regular basis. Of
these, 9 (17.3 percent) were required to do so by state or local law. 23 (22.5 percent) cities
indicated they formally track abandoned structures. Of these, 8 (34.8 percent) were required by
law. Figure 1 shows the percentage of cities that track vacant properties separated by geographic

area. The Northeastern region has the highest percentage of cities that track abandoned structures. Previous research indicates that cities with low proportions of vacant land (i.e. Northeast cities) have high numbers of abandoned structures. [47] A possible explanation is that Northeastern cities track abandoned buildings because they have the largest (and possibly oldest) abandonment problems. Conversely, Western cities report very low numbers of abandoned structures and high levels of vacant land, so it makes sense that these cities tend to focus on tracking vacant land only.[*48] Figure 2 separates cities by recent growth trends. It is evident that declining cities are more likely to perform inventories than growing cities. Booming cities are most concerned with tracking vacant land for development and a less concerned with abandoned buildings. This could also be a reflection of regional variation, since all of the booming cities are located in the West or the South.

Tracking Methods. The methodology used to track vacant land and abandoned properties varied greatly from city to city. Many cities, such as Philadelphia, engage in intensive block-by-block windshield surveys to identify the condition of abandoned lots (including structures). Other cities such as San Jose rely on aerial photography to create vacant land maps. Boise chooses to use primarily tax assessor and building permit information. Most cities use a combination of these and other techniques. Table 2 shows the top six methods as reported by 50 cities that formally track vacant land and/or abandoned structures.

Table 2: Top 6 methods used to track vacant land and/or abandoned structures in 50 responding cities.*

	Cities	Percentage
Regular inspections and windshield surveys	27	54.0%
Tax assessor information	16	32.0%
Building permit/demolition information	17	34.0%
Aerial photography:	12	24.0%
Complaints and/or reports from neighbors	8	16.0%
Professional real estate information	3	6.0%

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* Many high growth cities in the West and South consider agricultural land or "raw dirt" on the fringe as vacant land. See Pagano and Bowman, 2000.

Note that several additional cities commented that they track vacant land or abandoned structures through "informal" means such as neighborhood complaints. They have no formal procedure to track vacant land and usually do not house the information in an accessible database. For instance the city of Phoenix does not inventory abandoned structures, but it "acknowledges abandoned structures as it responds to neighborhood and community complaints."[49]

43.4 percent (23 out of 53) of responding cities indicated they track vacant properties by continuously updating land parcel records throughout the year. Cities, such as Chicago, St. Paul, and Baton Rouge, performed an extensive one-time windshield inspection to create the initial database. As vacant land is acquired, lost, or build upon, planners use alterations in tax records and building permits as indicators of changes in land use. The appropriate changes are then noted in the inventory database (usually in GIS). Other cities like Philadelphia, Knoxville, and Sacramento choose to update the inventory on a more periodic basis. 34.0 percent (18) update the vacant land/abandoned structure inventory annually, while 22.6 percent (12) of responding cities choose to update every 2 or more years.

For those cities that update continuously throughout the year, many planners reported that the time dedicated to inventory has become an integral part of the normal routine and thus is impossible to separate out from other daily activities. Cities that update on periodic basis spend anywhere from 1 week to 8 months to complete the task, depending on methodology and the size of the city. Table 3 reports the time to complete the inventory for those cities that update on a periodic basis.

Table 3: Time dedicated to tracking vacant

land and/or abandoned structures in 29 cities*

	Cities	Percentage
Less than 1 month	11	37.9%
1-3 months	8	27.6%
Greater than 3 months	10	34.5%

*Note: 23 cities reported continuous monitoring

Keeping track of information in an accessible, searchable format is as important as collecting information. 70.7 percent (41 of 58) of cities use a geographic information system to track vacant lands and abandoned structures. The remaining cities keep track using non-spatial computer database (8 cities), or by hand (9). A few cities like Rockford, Illinois, and Alexandria, Virginia indicated that GIS would be in place in the near future and would be used to improve the inventory.

Staff Time. Planners were asked to report the amount of time staff spends on the inventory by estimating the number of person-hours it takes to complete the task. Person-hours equal the number of staff hours contributed to the vacant property inventory per year (Example: 3 staff x 10 hours/week each x 4 weeks/year = 120 person-hours). On average 32 responding cities spent 2,878 person-hours on the vacant property inventory, although the figures varied considerably (standard error = 1292). A small subset of cities reported higher person-hours. A few examples of these are Louisville, which estimated 35,625 person-hours to complete the inventory, Rochester - 18,200 person-hours, and Philadelphia - 16,000 person-hours. The median staff time was far more modest at 270 person hours. Those cities that reported extremely low staff time tended to be smaller cities that relied solely on permit information, such as West Valley City, Utah (8 person-hours) and Sunnyvale, California (10 person-hours). Note that many planners had difficulty making this estimation because the inventory involved working with several different municipal departments. Some of these departments include: buildings and inspection, planning, neighborhood development agencies, and GIS/information technology specialists.

Costs. 22 cities were able estimate the cost of the vacant property inventory again the figures varied greatly from city to city. Responding cities costs ranged from $500 per year (Newport News, Virginia) to over $650,000 per year (Savannah, Georgia). On a yearly average, cities spent $412 per thousand residents,. For cities that only surveyed vacant land, yearly costs averaged $150 per thousand inhabitants. Cities that inventory *both* vacant land and abandoned structures spent on average $789 per thousand inhabitants. These results indicate that cities that track abandoned structures pay a higher price.

As expected, methodology plays a large role in determining the costs of tracking vacant land and abandoned properties. Cities that use on-site inspections incur higher costs than those who rely on permit data. The average yearly cost for cities that use inspections was $665 (median cost is $61/1000/year) per thousand residents versus $47 (median cost is $18/1000/year) for those that do not. Many respondents indicated that it was difficult to separate the costs of the inventory out from day to day activities. For others budget numbers across agencies were simply not available. Also, many cities reported high start-up costs (actual budget numbers unknown) for GIS technology and initial data gathering.

Confidence in the inventory. In general, city officials were pleased with the reliability of their inventory data. Officials were asked to rate their confidence in the vacant land and abandoned property inventory on a scale of 1-4 (4 being very confident and 1 being least confident). Out of 52 responding cities, 17 (32.7 percent) reported "very confident"; 26 (50.0 percent) reported "moderately confident"; 7 reported "less confident" (13.5 percent) and only 4 (4.1 percent) reported "least confident." Typical explanations for less and least confident ratings were "old data," "lack of database maintenance," and "unreliable data from other agencies."

Improving the reliability of vacant land inventories is important to many city officials. Table 4 indicates that additional funding for staff, technology and training are the most important needs to improve the inventory.

Table 4: Resources needed to improve vacant land and abandoned structure inventory in 44 cities.*

	Cities	Percentage
Funding for additional staff	26	59.1%
Technology and technology training	22	50.0%
Time	11	25.0%
Better coordination / integration between city agencies	7	15.9%
Other	4	9.1%

Note: Some cities noted multiple improvements

In general, additional staff is needed to carry out on-site inspections, database maintenance, and GIS work. For many cities, improvements in technology are necessary to make the inventory more accessible to the general public and other municipal agencies. For example, several cities commented that even though they had a GIS system, their software lacked the ability to link up with tax assessor data, or permit data.

Vacant land data often is scattered between the different agencies that deal with vacant properties. In Philadelphia alone, at least fifteen different city departments deal with vacant properties.[50] This is not a unique situation. Vacant property was not a problem for older cities when governments were being established, and no priority was given tracking these properties. As problems arose over time, agencies were given responsibility on an ad hoc basis. Many times these agencies (i.e. planning, development, inspections, fire, tax assessor) have little history of coordination.[51] The result is that vacant land information becomes hidden in many different forms across many different agencies and there is no efficient means of distributing information across departments. The lack of communication between departments leads to discrepancies and inaccuracies in the data.[52] Several cities such as Chicago, Cincinnati and New York City have

developed centralized computer databases for managing vacant land. Chicago's extensive land

use GIS system (known as LIS) is accessible by personnel from city agencies such as license and

inspection, planning, economic development and real estate. The system provides information

on ownership, physical description and dimensions, tax status, building permits and more. The

system is updated regularly to reflect changes in land use information.[53] Centralized database

systems increase reliability and access to accurate vacant land information, which allows for

more efficient management of vacant land. Mark Alan Hughes believes that a consolidated

public authority should be placed in charge of urban vacant land. This authority should be

responsible for all areas of managing vacant land including the vacant land inventory, strategic

planning, land assembly, maintenance, acquisition and disposal.[54]

  Use of the inventory. The real benefits of tracking vacant land are embodied by how cities

utilize the information gained by the inventory. Table 5 shows the how 49 responding cities

utilize the vacant property information acquired from the inventory process.

Table 5: Uses of vacant land and/or abandoned structure inventory information in 49 cities.*

	Cities	Percentage
Locating and assembling potential infill sites	35	71.4%
Long range planning	21	42.9%
Neighborhood trend projections	10	20.4%
Public information	9	18.4%
Tax collection and foreclosure	4	8.2%
Code enforcement	4	8.2%
Demolition	4	8.2%
Other (maintenance, fire safety, crime analysis)	6	12.2%

Note: Some cities noted multiple uses

The inventory provides critical information necessary to devise a comprehensive citywide

strategy for dealing with urban vacant land. The most important function of the inventory is to

provide information regarding areas that are prime for redevelopment and infill. In Louisville,

abandoned property data is used to identify areas eligible for special financial assistance, small

area planning studies or major redevelopment assistance. The Tallahassee Planning Department

uses the inventory to "calculate future growth potential of city and the surrounding urban

services area."[55] Philadelphia has adopted citywide "right-sizing" approach to reshape the city to

serve a much smaller population.[56] The inventory helps locate properties for demolition and

conversion to open space such as community gardens and greenways.

The inventory directly facilitates the location of parcels of vacant land ripe for infill

development. For example in Boston, the inventory became the foundation for Project 747

program in which the Public Facilities Department identified 747 city-owned lots available for

affordable housing development. Sites were offered to non-profit and for-profit developers

whose site plans met appropriate guidelines for quality design and livability.[57] Cleveland has

established the Land Bank program to encourage local residents and businesses to buy vacant

properties. The city uses the vacant land inventory to help assemble properties into usable lots.

Residents identify properties from the inventory of parcels and submit a proposal for

redevelopment. Redevelopment may be as small as adding a lawn or driveway to an adjacent

house, or as big as a new home or commercial development. If the proposal is accepted,

residents can buy adjacent property for $1 and buildable lots for $100. The vacant land inventory

facilitates the targeting of tax delinquent properties, which is seized through an aggressive

foreclosure program. Foreclosed land is later disposed of through the Land Bank.[58] Cleveland

averages 1500 to 2000 foreclosures per year (up from 75 per year before the institution of the

Land Bank program).[59]

Tracking vacant land gives cities the opportunity to make the inventory available for

public use by neighborhood residents, CDCs and private developers. Cincinnati, which

conducted one of first comprehensive inventories, posts its full vacant land inventory on the

planning web site. The web site gives vital neighborhood information as well as vacant land

maps. It is user friendly and is a model for other cities.[60] Potential developers can click through

an updated database to locate land parcels suitable for their needs. Figure 4 is a vacant land map

of the South Fairmount neighborhood in Cincinnati obtained from the CPD web site

(www.rcc.org/planning).   Other cities such as Boise, Idaho are experimenting with a similar

system.

An inventory of vacant land also allows for aggressive code enforcement programs,

which deter building owners from neglecting their properties. San Diego uses the inventory as

part of a comprehensive vacant property program, which emphasizes strict code enforcement and

monitoring. The effort is intended to prevent nuisance parcels from forming and protect public

safety. Owners have a duty to clean and secure all vacant facilities or face stiff fines, which

includes cost of abatement. Boarding and lock-up procedures must follow strict standards.

Owners of vacant buildings must submit a plan with the City that details the expected period of

vacancy, a maintenance plan, and a plan for demolition/rehabilitation. The Owners of a vacant

building faces a fine of $250 for each 90-day period that the building remains vacant.[61]

Cities that do not track urban vacant land.

48 responding cities (47.1 percent) do not formally track vacant land. 79 responding

cities (77.4 percent) do not formally track abandoned structures. Figure 3 indicates that larger

cities are more likely to track vacant properties than smaller cities (top graph). Nearly half of

small cities do not track vacant property (compared to approximately 25 percent of larger cities).

One possible explanation for this trend is that smaller cities lack the capacity to fund

comprehensive tracking programs. In fact, 63 percent of small cities that do not track vacant

land indicated that they lack technology or staff to inventory vacant properties (in comparison to only 37 percent of large cities).

71.1 percent (32 out of 45) of these cities indicated that conducting such an inventory would be helpful in land use decision-making. 73.2 percent (41 out of 56) of these cities reported that an abandoned structure inventory would be helpful addressing land use issues. Many of cities understand the benefits of tracking urban vacant land. The two most common reasons that city officials supported inventories were to "locate areas ripe for infill redevelopment", and "identify neighborhood and housing conditions." For example, Norwalk, California does not conduct inventories, but stated, "in a built-out community such as Norwalk, there are limited opportunities for new development. Developers often ask for a City's assistance in identifying sites. A land inventory can facilitate the matching of developers with sites."[62] Mobile, Alabama indicated that such an inventory would be helpful to address NIMBY situations by locating appropriate areas for redevelopment. Bakersfield, California commented that the inventory,

> …would be particularly useful if the information were tied to a GIS…[and] used in conjunction with other GIS data sets to help analyze other issues. For example, if information on abandoned or vacant structures were combined with robberies or gang activity, a correlation could be looked for.[63]

Conversely, 13 cities (28.9 percent) indicated that vacant land was currently not a problem, and an inventory of this type would be unhelpful. 15 cities (26.8 percent) indicated similar reasons for not conducting an abandoned structure inventory. All 15 of these cities were similar in that they were relatively small (less than 250,000 people), fast growing cities. All, but Lincoln, Nebraska, were located in the West or the South. In fact, Lincoln's comments summed up the feeling in these cities, "Lincoln is a vital growth city and, as such, vacant land and structures are usually in demand by developers and agencies. Such properties do exist, but rarely remain vacant for any significant length of time."[64]

Barriers and Needs.   Given the benefits of tracking vacant land in many cities, it is important

to understand the obstacles that prevent cities from carrying out this important task. Many cities

indicated that conducting vacant property inventories would be a difficult accomplishment given

the current fiscal climate. Table 6 shows the perceived barriers that 56 cities face to implement

vacant land and/or abandoned structure inventories. Table 7 shows the resources city officials

listed as being necessary to carry out an effective vacant property inventory.

Table 6: Barriers to conducting vacant land and/or abandoned structure inventories in 56 cities.*

	Cities	Percentage
Staffing constraints	31	55.4%
Budget constraints	15	26.8%
Incomplete or unmanageable data	10	17.9%
Lack of integrated GIS system	9	16.1%
Time to maintain database	9	16.1%
Lack of interest	8	14.3%
Lack of political will	4	7.1%
Other	3	5.4%

Note: Some cities noted multiple barriers

Table 7: Resources needed to conduct vacant land and abandoned structure inventories in 56 cities.*

	Cities	Percentage
Funding for additional staff	38	67.9%
Technology and technology training	27	48.2%
Time	17	30.4%
Lack coordination / communication between city agencies	6	10.7%
Other	8	14.3%

Note: Some cities noted multiple resources

Costs appear to be the largest barrier to conducting vacant land inventories. Comments

by respondents indicate that current levels of staffing, and technology are not adequate to sustain

a suitable database. Cities simply need more manpower for windshield surveys, database

maintenance, and GIS work. Given the tight economic constraints that strangle many cities, it is

simple impossible for them to carry out a large-scale vacant land inventory.   The respondent

from Bridgeport, Connecticut astutely noted, "Based upon past history, this type of program

[tracking abandoned buildings] is usually one of the first to suffer as resources change or are reduced."[65]

Technological needs included hardware, software and training for staff. Interestingly, 47 of these cities (83.9 percent) already have a GIS system for other uses such as transportation planning, emergency response and redistricting. This signifies that many planning departments could begin tracking vacant lands without having to make a large capital investment in a GIS system. Several cities such as Moreno Valley, California indicated that they lacked technology to link the GIS with a permit tracking system. 3 cities noted that as their new GIS system comes online, they would begin tracking vacant land and abandoned structures.

Implications

These results of this study serve to highlight the patchiness of municipal government data regarding vacant lots and abandoned structures. Approximately one half all cities do not formally track vacant land, while just over two-thirds of cities do not track abandoned structures. Without reliable data, it is very difficult for cities to effectively manage vacant land. Prioritizing the tracking of vacant properties is the first step to addressing urban vacant land issues. A comprehensive inventory allows cities to design effective strategies to encourage both large and small scale reuse and redevelopment. A city that does not track vacant land faces difficult informational barriers that inhibit the conversion of vacant properties into positive urban spaces. The major obstacles to tracking vacant properties appear to be the costs of staffing, technology and database maintenance. Requiring cities to conduct vacant land inventories by law would be difficult to implement and unproductive, as cities are resistant to unfunded mandates. A national funding program would be the most direct way to eliminate cost barriers. The program could provide funds for cities to upgrade their capacity to track vacant lands with the purchase of new

technology and the hiring of trained staff. For those cities that do track urban vacant land, the program could enhance reliability and quality of ongoing inventory programs.
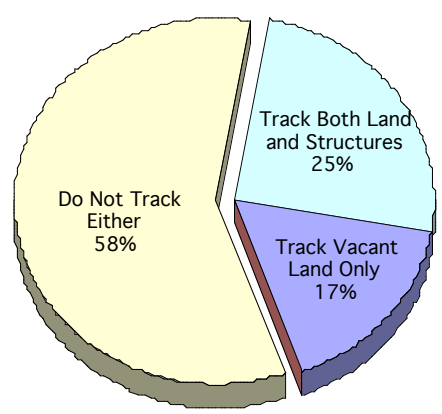
Acknowledgements

Northeast

Do Not Track Either 29%

Track Both Land and Structures 43%

Track Vacant Land Only 14%

Track Abandoned Structures Only 14%

Midwest

Track Both Land and Structures 25%

Do Not Track Either 58%

Track Vacant Land Only 17%

South

Track Both Land and Structures 25%

Do Not Track Either 44%

Track Vacant Land Only 28%

Track Abandoned Structures Only 3%

West

Track Both Land and Structures 7%

Do Not Track Either 40%

Track Vacant Land Only 48%
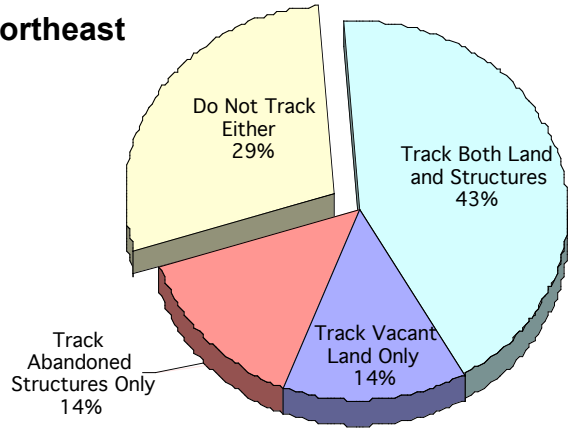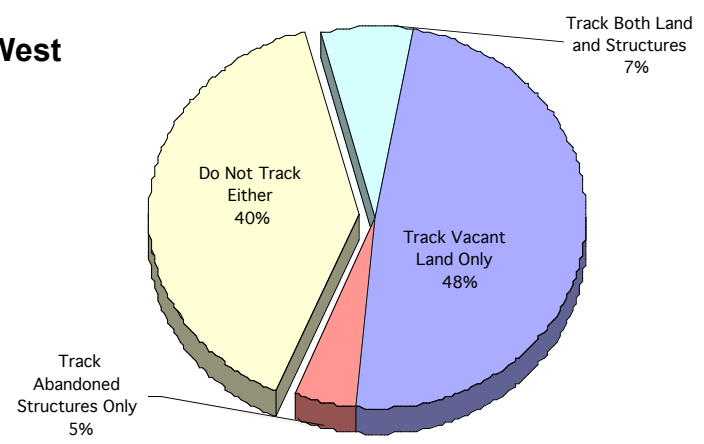
Track Abandoned Structures Only 5%
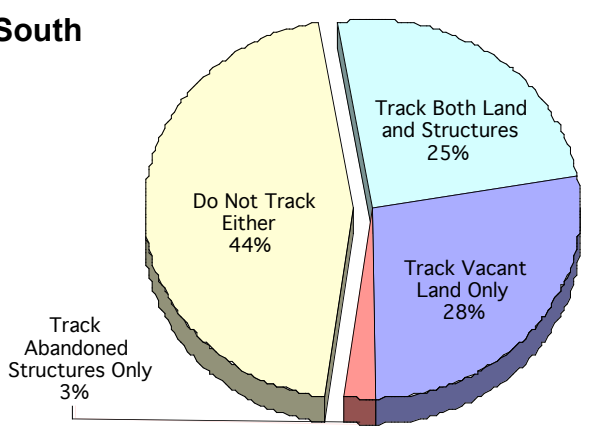
Figure 1. Tracking vacant land response of 102 cities by geographic region. Cities are categorized as tracking vacant lands only, abandoned structures only, both, or neither. Total responding cities for each region: Northeast: 7; Midwest: 12; South: 40; West: 43. Cities placed into geographic region according to U.S. Census region assignments.
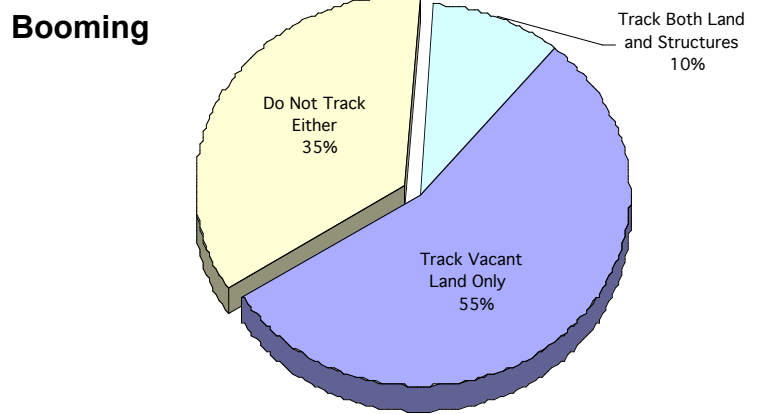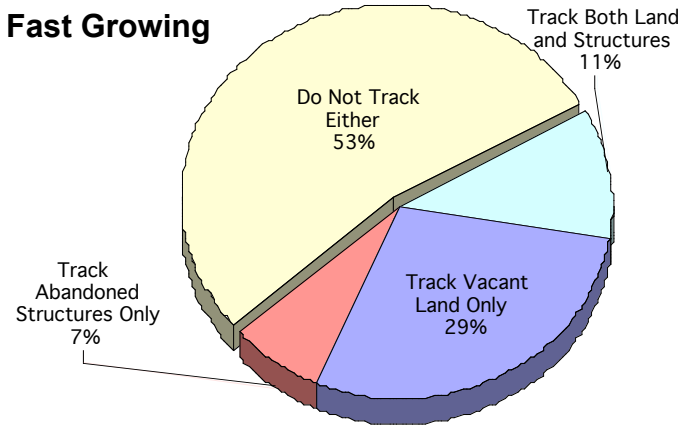
Declining Cities

- Do Not Track Either 33%
- Track Abandoned Structures Only 8%
- Track Vacant Land Only 8%
- Track Both Land and Structures 51%

Moderately Growing

- Do Not Track Either 43%
- Track Abandoned Structures Only 2%
- Track Both Land and Structures 19%
- Track Vacant Land Only 36%

Fast Growing

- Do Not Track Either 53%
- Track Abandoned Structures Only 7%
- Track Vacant Land Only 29%
- Track Both Land and Structures 11%

Booming

- Do Not Track Either 35%
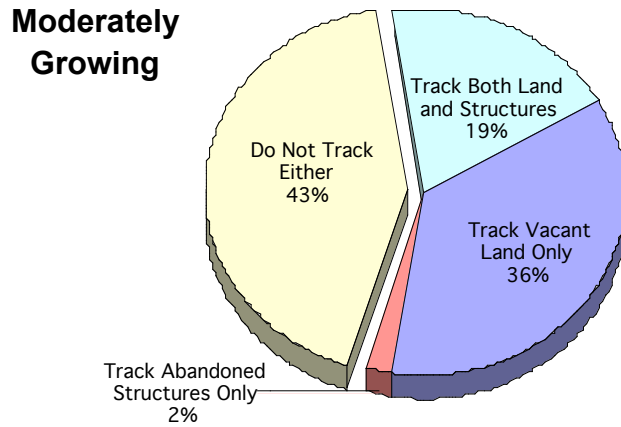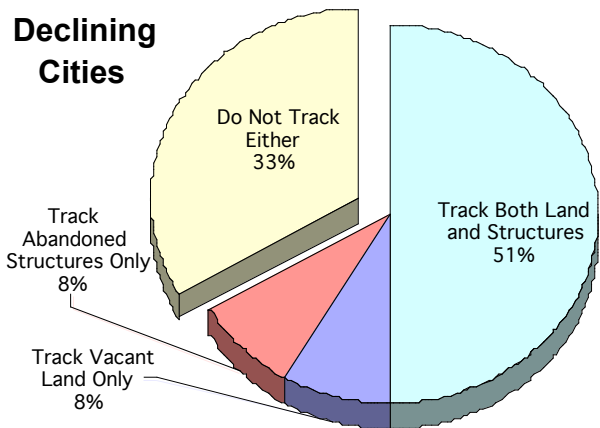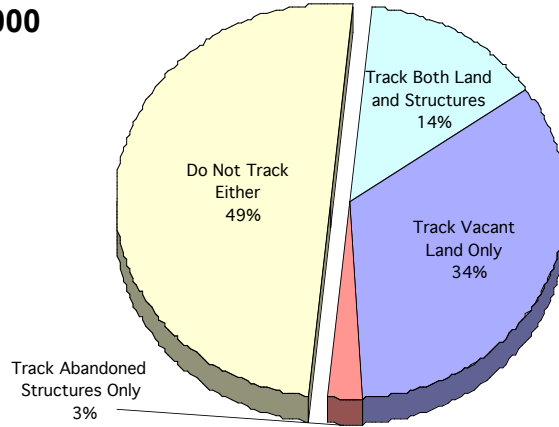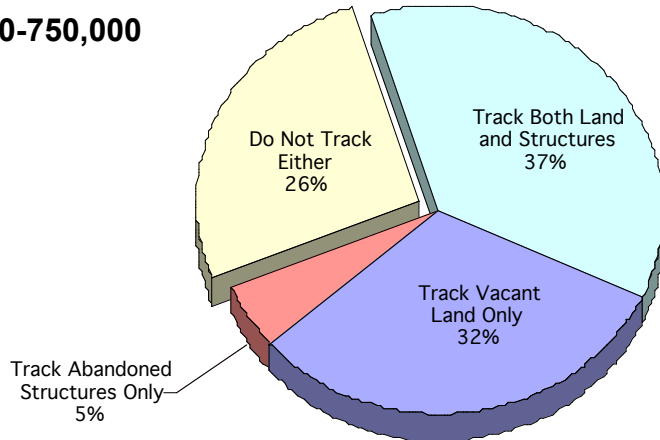- Track Vacant Land Only 55%
- Track Both Land and Structures 10%

Figure 2. Tracking vacant land response of 102 cities by percent change in population from 1990-2000. Cities are categorized as tracking vacant lands only, abandoned structures only, both, or neither. Total responding cities for each growth change grouping: declining (≤ 0 %): 12 moderately growing (1-15%): 42; fast growing (16-30%): 28; booming > 30%: 20. Population change data compiled from U.S. Census 1990, 2000.

100-250,000

Track Both Land
and Structures
14%

Do Not Track
Either
49%

Track Vacant
Land Only
34%

Track Abandoned
Structures Only
3%

250-750,000

Do Not Track
Either
26%

Track Both Land
and Structures
37%

Track Vacant
Land Only
32%

Track Abandoned
Structures Only
5%

**Greater than
750,000**

Do Not Track
Either
22%

Track Both Land
and Structures
22%

Track Vacant
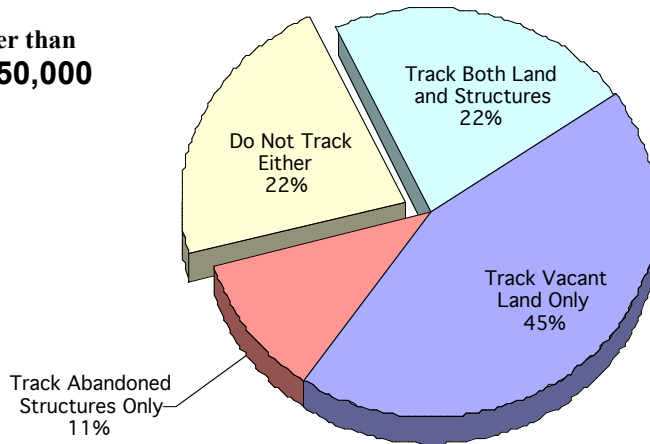Land Only
45%

Track Abandoned
Structures Only
11%

Figure 3. Tracking vacant land response of 102 cities by population size. Cities are categorized as tracking vacant lands only, abandoned structures only, both, or neither. Total responding cities for each population grouping: 100-250,000 people: 74; 250-750,000 people: 19; greater than 750,000 people: 9; Cities placed into population according to U.S. Census 2000.

Figure 4. Sample vacant land and abandoned property available from Cincinnati's planning web site.

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