and time consuming to design, install, and pay for needed infrastructure to support urban development. Obsolete and premature subdivisions pose constraints on urban development practices, and for those reasons, are considered to be "slow absorption" areas. This does not mean that the Planned Growth Strategy assumes that little or no growth will occur in these areas. These areas were separately classified in the land inventory so that the recent history of residential and non-residential development in each could inform the assumptions about future growth. This situation does suggest, however, that achieving desired rates of development higher than historical norms may require special programs. Neither does it mean that the large inventory of residential redevelopable land in the Valley was used to support an increase in development there.

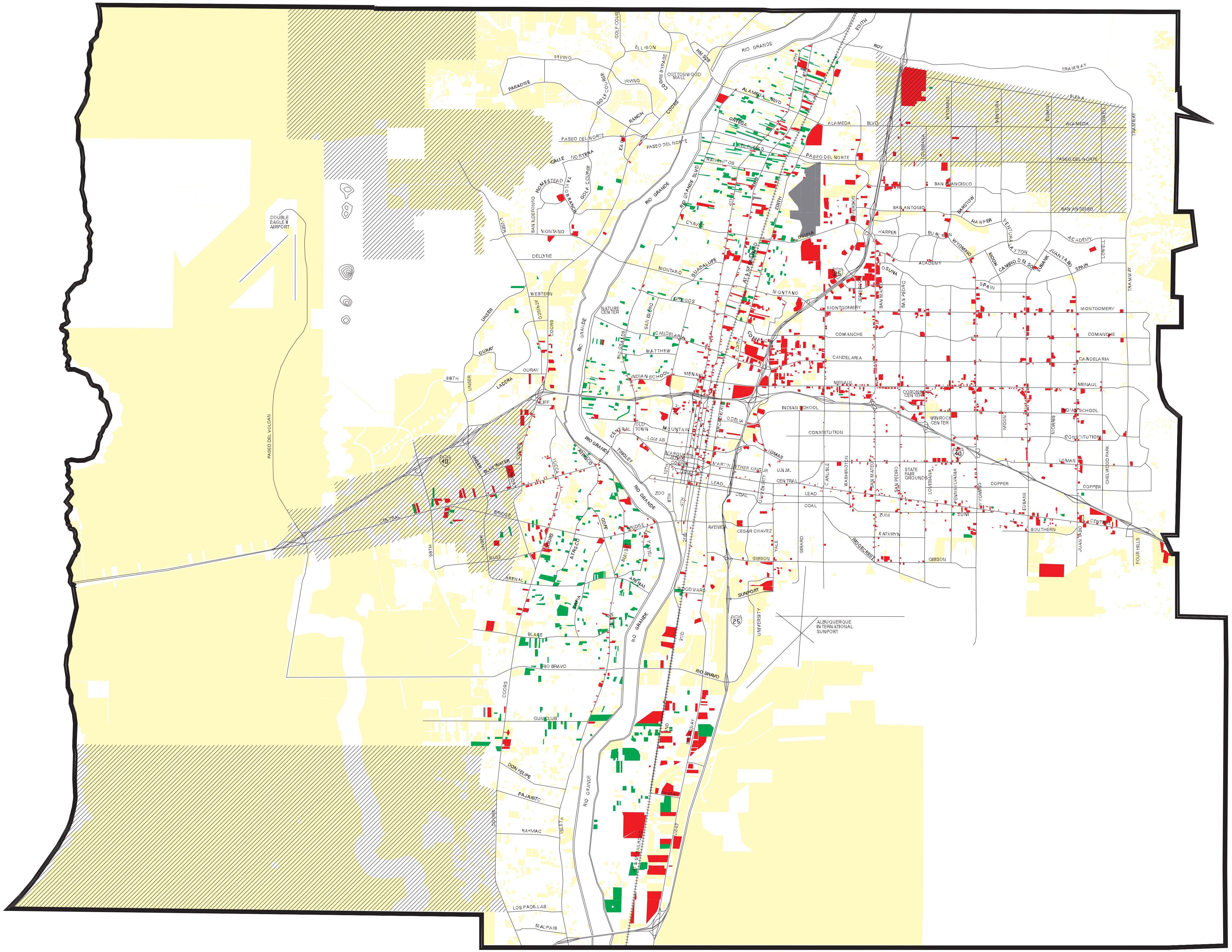
Inducements to Development – Infrastructure Related

Overview. Public sentiment expressed in the Shared Vision Town Halls, Comprehensive Plan policies, good planning practice, and simple common sense call for close linkages between growth and urban infrastructure planning. Town Hall participants supported the provision of infrastructure in an efficient and cost-effective manner and conducting cost analyses to set priorities for the delivery of service. They endorsed compact urban development and the utilization of long-term infrastructure planning as part of the Capital Improvements Program to help guide development. They believed that development should occur in areas where existing services are available "as a first priority." Town Hall participants suggested that an urban infrastructure service area be defined. The Comprehensive Plan also contains policies that support sound fiscal management and that give the existing infrastructure service area (defined as the area with developed infrastructure) the highest priority for use.[101]

The Planned Growth Strategy took the next set of steps required to understand what these adopted policies and preferences imply in terms of already developed urban infrastructure in the Albuquerque metropolitan area. The current infrastructure situation, in the context of these policies and preferences, leads to the priorities for urban growth that are expressed in the Preferred Alternative. It should be observed that these starting points necessarily address the *built* infrastructure environment (not long-term plans and service or franchise areas), in a manner consistent with adopted public policy.

The following set of four figures are titled "Development Inducements." By this it is meant that in terms of the preferences expressed by the public as reported above and adopted public policy, the areas that either are nearly completely built-out in infrastructure or are partially developed with infrastructure constitute an "Inducement" for future growth in the Planned Growth Strategy.

Cost savings based on planned, compact urban growth. The Planned Growth Strategy Part 1 – Findings Report addressed whether the pattern of urban growth could impact the cost of infrastructure to serve that growth over the forecast period. Three alternative growth patterns were established, referred to as the Trend, Downtown, and Balanced Scenarios. The capital costs for providing water, sewer, street, storm drainage, and transit infrastructure were determined for each of these scenarios. In addition, since infrastructure cost is borne by the community tax- and ratepayers as a group (called "public" costs) and by property owners or developers being served (called "private" costs), infrastructure costs to support growth were calculated for total costs and for public and private costs separately. This methodology was reviewed and agreed upon by an ad-hoc committee representing business and



Slow Absorption Areas

Legend

- Undeveloped Land
- Residential Redevelopable Land
- Commercial Redevelopable Land
- Multi-Use Redevelopable Land
- Multiple Ownership/Obsolete Platting

Figure 10

Planned Growth Strategy

Scale: 1 inch = 2 miles
Map Printed January 2001

Table 6 Growth Associated Costs (in millions)

	Total Costs			Public Costs		
	Trend	Balanced	Downtown	Trend	Balanced	Downtown
Water	$685.8	$565.2	$568.7	$370.2	$339.2	$330.5
Sewer	$353.5	$340.1	$324.4	$70.8	$70.1	$66.8
Storm Drainage	$277.0	$238.8	$212.9	$154.7	$147.0	$131.9
Streets	$455.8	$365.0	$386.7	$102.3	$95.8	$95.5
Transit	$323.5	$247.4	$249.4	$323.5	$247.4	$249.4
Total Growth	**$2,095.7**	**$1,756.5**	**$1,742.2**	**$1,021.5**	**$899.5**	**$874.1**
Difference from Trend		**– $339.2 – 16.2%**	**– $353.5 – 16.9%**		**– $122 – 11.9%**	**– $147.4 – 14.4%**

development groups, including the National Association of Industrial and Office Parks, the Chamber of Commerce, and the Economic Forum. The Planned Growth Strategy Part 1 – Findings Report described these alternatives and the techniques employed to establish infrastructure costs. The results of this analysis are covered in a summary fashion in the tables here. Please note that all of these scenarios used the same official population and employment growth forecasts over the forecast period. Differences in cost, therefore, indicate whether there are more, or less, costly ways to serve the *same* amount of growth.

As discussed in the "Infrastructure Needs and Levels of Spending" section above, the engineering consultants made slightly different assumptions related to the forecast period in their Part 1 – Findings Report studies. The table 7 adjusts these figures to a common, 25-year forecast period. These figures are used in the discussions that follow. The growth related needs for transit capital are based on increasing the bus fleet from the current 128 buses to 314, consistent with the Regional Transit Authority plan. This expansion is expected to occur over 25 years.

From the standpoint of total costs and public costs borne by general taxpayers and utility ratepayers, the Downtown and Balanced Scenarios are more efficient in terms of capital costs to support the 25 years of

Table 7 Growth Associated Costs – 25 Years (in millions)

	Total Costs			Public Costs		
	Trend	Balanced	Downtown	Trend	Balanced	Downtown
Water	$685.8	$565.2	$568.7	$370.2	$339.2	$330.5
Sewer	$353.5	$340.1	$324.4	$70.8	$70.1	$66.8
Storm Drainage	$268.5	$231.4	$206.0	$147.7	$141.0	$126.2
Streets	$518.0	$414.7	$439.4	$116.3	$108.9	$108.5
Transit	$323.5	$247.4	$249.4	$323.5	$247.4	$249.4
Total Growth	**$2,149.3**	**$1,798.8**	**$1,787.9**	**$1,028.5**	**$906.6**	**$881.4**
Difference from Trend		**– $350.5 – 16.3%**	**– $361.4 – 16.8%**		**– $121.9 – 11.9%**	**– $147.1 – 14.3%**

projected urban growth. Total cost and costs to the public both are important. In terms of total cost, the Downtown Scenario requires $361 million less than Trend to support urban growth over 25 years, or 16.8% less. This situation is only slightly different for the Balanced Scenario: $351 million less, or 16.3% less. This analysis indicates, overall, that the cost of growth is divided rather equally between the private developer or property owner and the general public—with about 50% established as the general public's support of the cost of growth.

With regard to general public cost to support growth, the picture is similar to that observed for total cost. The Downtown Scenario is $147 million less costly over 25 years than is the Trend Scenario, or 14.3% less. The Balanced Scenario is $122 million less expensive than Trend, or 11.9% less. The reasons for the differences in cost becomes clearer when considering the needed individual water, street, sewer, and storm drainage improvements. Each of these types of infrastructure is covered in a section below.

The analysis of the three scenarios was used in the development of the Preferred Alternative. It is believed that additional infrastructure savings can be achieved based on the Part 1 – Findings Report analyses. Some examples of potential savings include: $19.1 million in water savings by recognizing that the Ridgecrest Trunk in the water system currently has excess capacity; substantial savings in the $15.3 million cost associated with sewer Parallel Lines due to the approach of increasing capacity at the same time that needed rehabilitation is provided; and more than $17 million in public storm drainage cost savings by avoiding development on the top of the volcano escarpment in the following drainage basins: Piedras Marcadas, Mariposa, Boca Negra, and Rinconada, and in the higher elevations of Ladera-Mirehaven. This last recommendation was made by the consulting engineers and is summarized in the storm drainage infrastructure section below. Furthermore, a number of studies, which are summarized in Chapter 5, Section 5.5.2 below, indicate that the number and length of Single Occupancy Vehicle trips can be reduced significantly through mixed use, transit, and pedestrian friendly development and greater jobs-housing balance.

The figures above reflect the capital costs associated with different patterns of growth. In the Part 1 – Findings Report, Parsons Brinckerhoff estimated the transportation operating costs related to growth.[102] The transportation operating costs covered included: private vehicle cost, public transit cost, private transit cost, private cost of travel time, and societal costs associated with air pollution. By 2020, the annual difference between Trend and the Balanced Scenarios was $115 million in favor of the latter. The annual difference between Trend and the Downtown Scenario was $83 million. A simplified calculation of the cumulative value of these differences was between $1 billion and $1.4 billion over a 25-year period. While these figures are quite large, they represent a small percentage difference of 3%, related to the Trend Scenario. The text referenced above provides a number of citations for the methods used in calculating these figures.

The total cost represents the cost to the property owner or developer to provide urban infrastructure and also the total expenditure in the community for infrastructure instead of other goods or services. It is in the interest of the property owner to reduce his or her cost to develop. The economy of the community as a whole, as shown in the McKee economic modeling analysis in the Part 1 – Findings Report, is benefited by increased spending for consumer goods or services rather than for additional infrastructure.[103] From the standpoint of the taxpayer/ratepayer it is clear that lower infrastructure costs represent the potential for lower property taxes and water and sewer rates to support urban growth or for additional resources to cover the shortfall in spending for infrastructure rehabilitation and deficiencies. This analysis assumes that the general taxpayer/ratepayer is subsidizing, to the established degree, the infrastructure being used by the owner of a new home or other development.

The implications of this situation depend on the perspectives of the policy-makers, developers, property owners, and tax and ratepayers. Some appropriate questions related to this situation include the following: Does the relatively low-density pattern of Albuquerque's more recent growth merit the additional subsidy by the general public of $147 million dollars in infrastructure expenditures over 25 years, or nearly $6 million dollars per year. Do property owners and developers wish to pay additional costs for a less efficiently planned community? Do residents want to incur higher transportation costs in exchange for more spread-out development?

Infrastructure Efficiency Related to the Capacity of Service Constructed. One factor to consider is that infrastructure is constructed in large blocks of capacity that often is significantly greater than what can be used by the initial development causing system expansion. As an example, water service is provided by "opening" a large water pressure zone that requires at a minimum the construction of a well, reservoir, pump station, and transmission line. The cost of these improvements is $7 to $8 million dollars and sufficient capacity is built to provide service to approximately 10,000 people.

The research that was done in 1995 to establish streets development Impact Fees in the City of Albuquerque also illustrates this situation. The cost of the additional road capacity was determined first by identifying a list of street capital improvement projects needed to provide the capacity to serve development expected during an 8-year period (1994–2002). The total cost for this roadway expansion was estimated as $241 million. The proposed Impact Fees were based on the average cost of the increase in the total roadway capacity. The magnitude of the excess capacity constructed roughly is represented by the difference between total cost of $241 million for road improvements and the estimated total revenue from Streets Impact Fees from 1994–2002 charged at 100% of $73 million. We can conclude that about three times more street capacity would need to be constructed to meet immediate (8 year) roadway demand. The same situation obtains, though perhaps not in the same magnitude, for sewer and storm drainage improvements.

There also are efficiency gains to be achieved through fully utilizing newly constructed water and sewer capacity relatively quickly. The Water and Wastewater Utility Program Assessment conducted by Parsons Engineering Science made the following point: "Overly large or redundant facilities increase both capital and operation and maintenance costs. For example, an overly large sewer may cause low flow velocities and require more frequent flushing; and an overly large water main may result in long retention times and stagnation, resulting in water quality problems; and redundant mechanical systems, if underutilized, may increase overall maintenance costs."[104] This is an additional argument for integrating utility system expansion with planning for growth.

The efficiency of the infrastructure system is enhanced by the orderly, integrated, expansion of infrastructure systems in relation to the capacity needed to support projected growth.

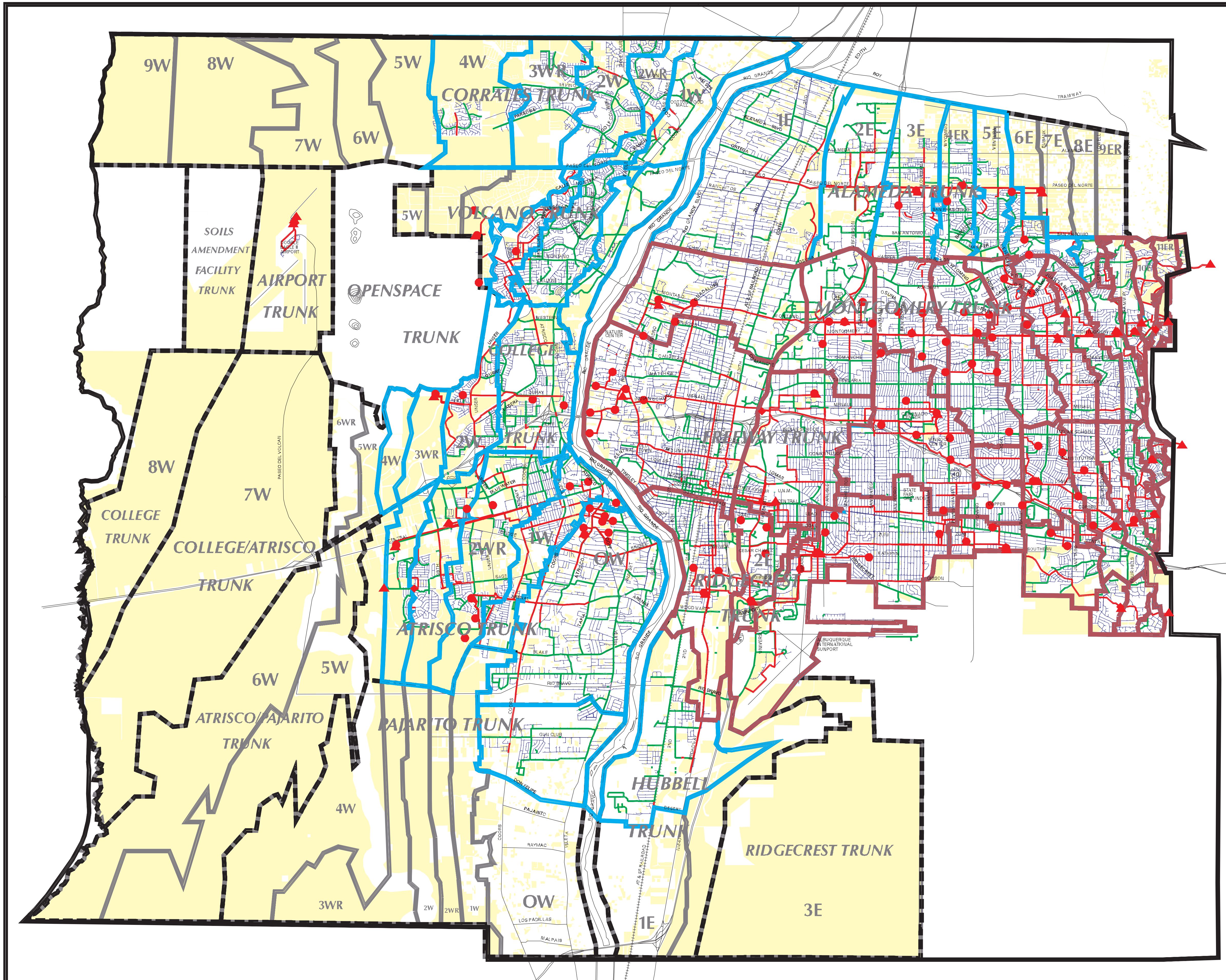
Water System Infrastructure

The urban water system plays a critical role in determining where growth occurs on the urban fringe. The manner in which the urban water system is expanded also significantly affects the public cost of supporting new growth. The water (and sewer) system is regional in scope. Figure 11 shows how the water system is subdivided for the provision of service. The metropolitan area is split up into “trunks” (e.g., Alameda, Montgomery, etc.) that essentially are independent water systems. Each of the trunks is divided into pressure “zones” (e.g., 1E, 2E, 3E, etc.) A pressure zone within a trunk is the basic unit for which urban water service is provided. A pressure zone within a trunk probably is the most costly single element of infrastructure system expansion. “Opening” a pressure zone generally requires a new well ($2.5 million), reservoir ($3 million), pump station ($1.75 million), and water transmission line ($0.4 million). The total cost for these items is about $7 to $8 million dollars. One important consideration is that opening a new pressure zone provides a “block” of capacity to serve approximately 10,000 persons. From a utility efficiency standpoint it makes sense to use the total capacity provided in a pressure zone in a timely way.

In order to understand how to provide urban water service to support growth efficiently, it is useful to break down the system into the types of improvements needed to provide service. These include wells, water rights, Supervisory Control and Data Acquisition (SCADA) system computer control system, reservoirs, pump stations, transmission lines between wells and the reservoirs, large “master plan” distribution lines, smaller distribution lines which run in the streets, and service connections between the smaller distribution lines and the lots. These infrastructure elements are shown in Figure 11.

Figure 11 indicates that the metropolitan area can be divided into three broad tiers of water service in terms of the future incremental cost necessary to support new growth. The first tier, pressure zones shown in red on Figure 11, is one that is nearly completely developed with all the types of water infrastructure and, according to utility engineers, has excess water capacity to support growth. Water trunks with excess capacity include the Montgomery Trunk, Freeway Trunk, and Ridgecrest Trunk. The identification of excess capacity addresses water supply and not distribution lines. The second tier, pressure zones shown in blue on Figure 11, already has a number of important infrastructure items constructed, such as reservoirs and transmission lines, but other types would have to be built to support urban growth, such as large and small distribution lines and service connections. This is indicated on Figure 11 by big tracts of vacant land, shown in yellow, which will require additional large and small water distribution lines (shown as green and blue lines) and service connections. The third tier, with pressure zones outlined in black, currently has no service. Consequently, the full range of new infrastructure would need to be built to support new urban growth in these pressure zones. This situation is indicated in Table 8.

This categorization of the metropolitan area is consistent with adopted Comprehensive Plan policy and with the Town Hall participants’ support for the provision of infrastructure in an efficient and cost-effective manner, preference that urban development should occur in areas where existing services are available “as a first priority,” and the recommendation that an urban infrastructure services area be defined. In order to achieve greater efficiency, the Planned Growth Strategy is concerned with fully utilizing the urban water system capacity already constructed. From the perspective of efficient infrastructure provision, Planned Growth Strategy is not concerned with unserved infrastructure franchise areas. The approach includes the facilities of the City of Albuquerque’s water and wastewater utility and of New Mexico Utilities, Inc. However, it does not address



Development Inducements

Water Trunks & Pressure Zones & Water Lines

Legend

- Undeveloped Land
- Less than or Equal to 8 inches
- Between 9 to 14 inches
- Greater than or Equal to 15 inches
- Water Trunk Zones
- Unserved Areas
- Partially Served Areas
- Fully Served Areas / Excess Capacity
- Well
- Reservoir
- Pump Station

Figure 11

Planned Growth Strategy

Scale: 1 inch = 2 miles
Map Printed January 2001

Table 8 Water System Infrastructure Needs

	Fully Served Areas With Excess Water Capacity*	Fully Served Areas	Partially Served Areas	Unserved Areas
Wells		X	X	X
Water Rights		X	X	X
SCADA	X	X	X	X
Reservoirs				X
Pump Stations				X
Transmission Pipelines				X
Master Plan Distribution Lines (10"–16")			X	X
Distribution Lines in Street (6"–8")			X	X
Service Connections	X		X	X

* Montgomery, Freeway, and Ridgecrest Trunks have excess water capacity.

small community systems and the Sandia Heights water system that are not designed for and do not have the capacity to support full urban development. This approach also has been taken for sewer, storm drainage, and streets infrastructure.

Wastewater System Infrastructure

The same approach was taken with regard to understanding the urban sewer system as it relates to the establishment of the Preferred Alternative. At the time that Part 1 of the Planned Growth Strategy study was being prepared, the utility divided its service area into units called sewer basins (e.g., Uptown, Coors, Four Hills) and sub-basins (e.g., UP-01, UP-02, CO-01). More recently, the utility has moved to a more general model of east side and west side of the Rio Grande basins with sub-basins used to compute capacity. This has not changed the approach used here to determine growth related costs and achieve system efficiencies. In fact, it has allowed us to make more refined service availability categories. Figure 12 is an updated depiction of sewer facilities, basins, and sub-basins. Where appropriate, sub-basins have been subdivided to indicate the level of infrastructure service available. Facilities shown include sewer interceptors that are major collection lines, collection lines in the streets, lift stations, and the sewage treatment plant.

As with water service, Figure 12 indicates that the metropolitan area can be divided into three general tiers in terms of the cost to support new growth with urban sewer service. The first tier includes sub-basins shown in red on the Figure 12. This area is nearly completely developed with all the local sewer infrastructure elements needed to support growth. The second tier, with sub-basins shown in blue, already has an interceptor line constructed, but smaller collection lines and service connections are needed and treatment plant capacity is required. The third tier, with sub-basins outlined in black, has no service at present and the full range of new infrastructure would be needed to support new urban growth.

This situation is indicated Table 9.

Since infrastructure efficiency primarily relates to the utilization of facilities already

Table 9 Wastewater System Infrastructure Needs

	Fully Served Areas	Partially Served Areas	Unserved Areas
Master Plan Sewer Lines—Interceptors			X
Small Collection Lines		X	X
Lift Station & Odor Control			X
Treatment Plant	X	X	X
Service Lines	X	X	X

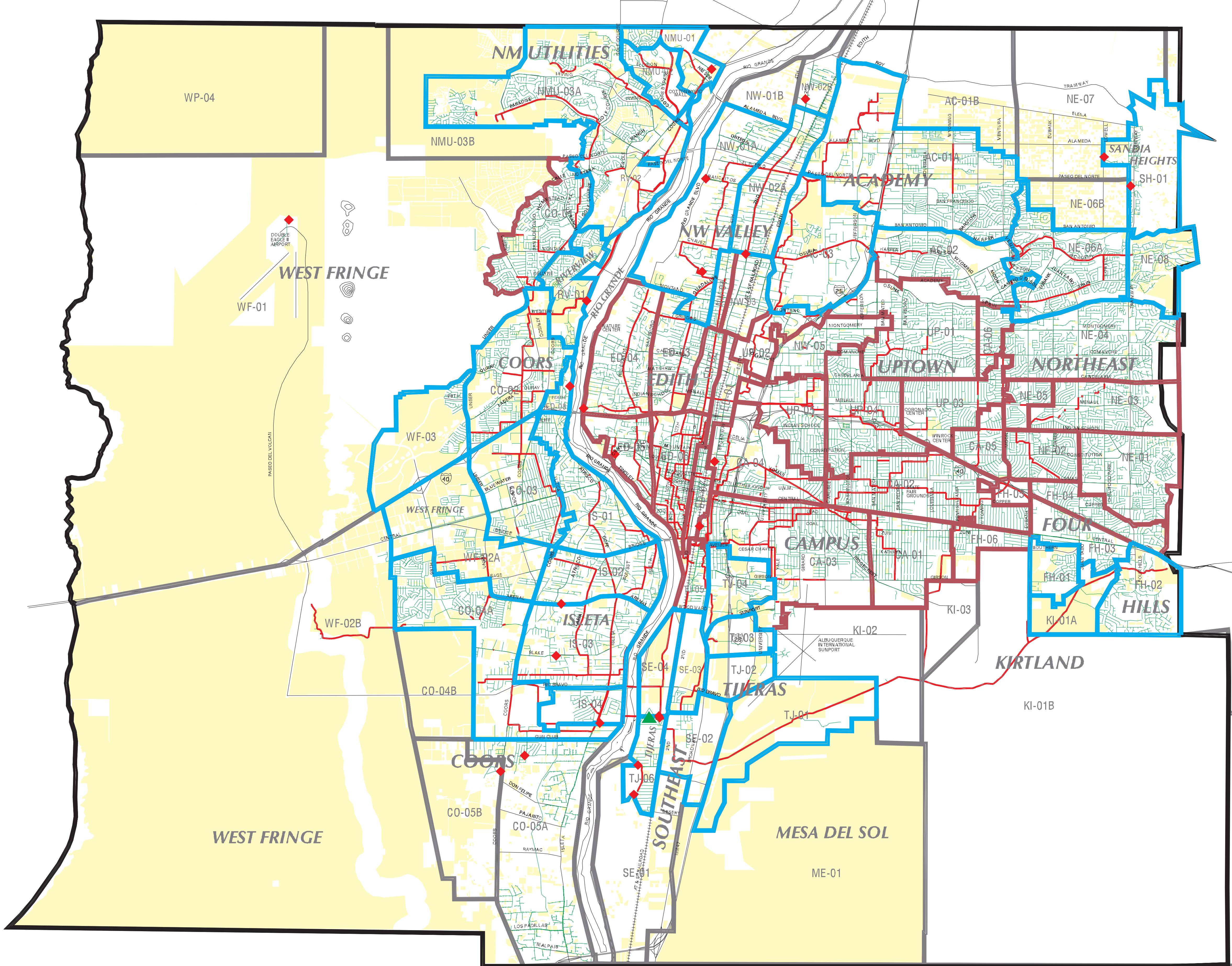
constructed, Planned Growth Strategy is not concerned from this standpoint with unserved infrastructure franchise areas. Figure 12 includes the facilities of the City of Albuquerque's wastewater utility and the New Mexico Utilities area that presently is served through a bulk discharge agreement with the City. It does not address small community systems and the Sandia Heights sewer system that are not designed for and do not have the capacity to support full urban development. Figure 12 contains an insert of the Tijeras canyon sewer basin. There is a joint powers agreement between the City, County, and the Albuquerque Public Schools to provide sewer service only to two public schools in the basin. While the Village of Tijeras has expressed interest in obtaining access to the City's sewer system, this agreement has not been reached and the entire village consists only of about 400 residents. At present, there is no commitment by the utility to provide general, urban level service in this basin.

Hydrology System Infrastructure

Storm drainage improvements are shown on Figure 13, including AMAFCA and City hard- and soft-line channels, N.M. Highway Department channels, underground drainpipes, and canals and drains. This figure also indicates the storm drainage basins (e.g., West I–40, North East Heights, and Valley). The same categorization of storm drainage basins into three service tiers is made here as with water and sewer, with areas shown in red representing storm drainage systems which are nearly completely developed, areas in blue which have significant amounts of land in vacant tracts and are partially served with storm drainage improvements, and basins outlined in black which are either largely or completely unserved. The consulting engineering firm, Wilson and Company, which estimated storm drainage development costs related to the three Planned Growth Strategy growth scenarios, did not approach deconstructing the storm drainage network in the same way as for water and sewer systems. As a result, this categorization is more conceptual than based on identifying storm drainage facility elements and costing each. The consulting engineers made the following important statement in the Part 1 – Findings Report: "Northwest Area above the Escarpment. This area is included in the following drainage basins: Piedras Marcadas, Mariposa, Boca Negra, and Rinconada, and in the higher elevations of Ladera-Mirehaven. . . . [T]his area has shallow basalt making trenching for utilities difficult and costly. The development of the basalt area above the escarpment on the West Side will result in expensive drainage infrastructure. Ideally, the land atop the escarpment should be planned with a low priority for development due to the high cost of construction and the sensitive nature of the area."[105] This position is supported in the Comprehensive Plan by placing these areas in the "Reserve" category.

Street System Infrastructure

Adopted Comprehensive Plan policies and the preferences of Planned Growth Strategy

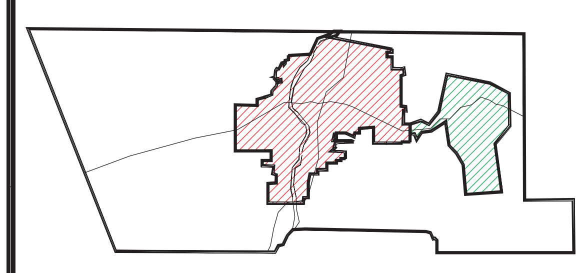


Development Inducements

Wastewater Basins/Subbasins & Sewer Lines

Legend

- Undeveloped Land
- Less than or Equal to 12 inches
- Greater than or Equal to 13 inches
- Unserved Areas
- Partially Served Areas
- Fully Served Areas
- Lift Station
- Southside Water Reclamation Plant

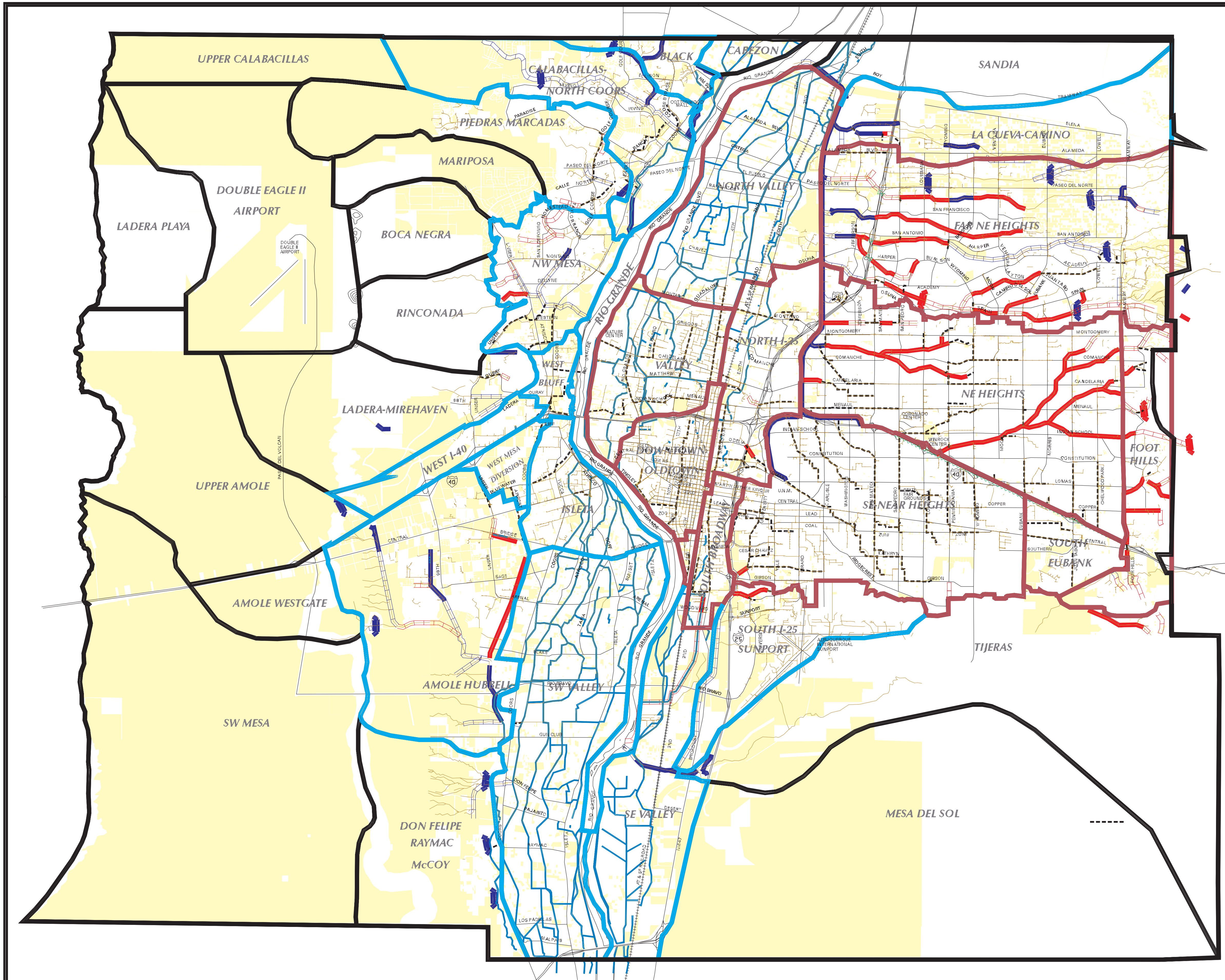


- Primary Service Area
- Secondary Service Area (Tijeras Canyon)

Figure 12

Planned Growth Strategy

Scale: 1 inch = 2 miles
Map Printed January 2001



Development Inducements

Hydrology Basins & Storm Lines & Improvements

Legend

- Undeveloped Land
- Storm Lines
- Unserved Areas
- Partially Served Areas
- Fully Served Areas
- AMAFCA Hard-Lined Channels
- AMAFCA Soft-Lined Channels
- City Hard-Lined Channels
- City Soft-Lined Channels
- NM State Highway Dept
- Major Pipe Systems
- Canals & Drains
- 100-Year Flood Zone

Figure 13

Planned Growth Strategy

Scale: 1 inch = 2 miles
Map Printed January 2001

Town Hall participants as reported above informed the analysis of street infrastructure shown on Figure 14. These policies and priorities include: support for the provision of infrastructure in an efficient and cost-effective manner, a belief that development should occur in areas where there are existing services available "as a first priority," development with jobs in proximity to houses, and mixed-use community centers with stores, restaurants, services, recreation, and public facilities.[106]

These preferences are supported by Planned Growth Strategy transportation modeling performed in Part 1 of the study. By 2020, the total transportation operating costs, including public cost, private cost, and a portion of societal costs indicate annual savings of between $84 million per year for the Downtown Scenario and $116 million per year for the Balanced Scenario. The savings are quite substantial in dollar amount over the 25-year forecast period ($1 billion to $1.4 billion dollars), but represents a small percentage difference of 3% related to the Trend Scenario. It is believed that this percentage may be conservative due to the insensitivity of the computer model to transportation mode share and to reduced Vehicle Miles Traveled resulting from certain land-use characteristics.

These figures indicate the very significant amount of spending related to private transportation operating costs, estimated as $2.1 billion per year in 2020. The Balanced Scenario performed better in this regard than did the Downtown Scenario, reinforcing the benefit of locating more jobs closer to housing. The magnitude of the public and private spending on transportation provides a clear financial rationale for the policies supported by the participants in the Town Halls and the Comprehensive Plan: reduced trip lengths and numbers and use of non-single occupancy vehicle modes of transportation. These preferences should be realized in ways that are consistent with public preferences for housing choice and variety. Figure 14 contains the major and minor roadway network, roadway sections by direction (east-, west-, north-, and south-bound lanes), and traffic congestion in the A.M. peak, the P.M. peak, and both A.M. and P.M. peaks. Red roadway segments indicate congestion both in A.M. and P.M. peak hours. Hence, double red lines indicate A.M. and P.M. peak hour congestion in both street directions. These areas include significant reaches of Tramway, Paseo del Norte near I–25, Edith south of Osuna, Coors Blvd and Coors Bypass, Golf Course between Ellison and Paseo del Norte, and I–40 east of the interchange with I–25. Some conclusions based on this pattern include the following. There are high levels of residential construction in areas with congested streets. There is an imbalance between residential development and employment growth resulting in high on-peak traffic loads on congested roadways.[107] There is only weak integration of infrastructure and land-use planning.

The small arrowheads on Figure 14 indicate where there is already built street capacity in an opposite direction to the existing congestion pattern. For example, consider the traffic load situation of Isleta, Arenal, South Coors, and 98th St. south of I–40, in the Southwest sector of the Planned Growth Strategy Focus Area. This area currently experiences north-bound and east-bound congestion in the A.M. peak and south-bound and west-bound congestion in the P.M. peak. This indicates that people's home are concentrated in the south and west areas and their jobs are located in the north and east. Achieving more efficient use of the built roadway system, and also producing better job-housing balance, would be fostered by locating more jobs in the Southwest sector. The direction of the arrowheads on Figure 14 shows where more jobs might be located beneficially. Figure 14 indicates that another employment center might be located in the area west and south of the Albuquerque Sunport. Additional employment on the Northwest Mesa might be useful in reducing congestion on this area's main arterials. Additional job sites in the Northeast sector are suggested but there may be limited opportunities to achieve this outcome.

One should note, as mentioned above, that the growth related streets projects were financially constrained as contained in the MRGCOG Transportation Improvement Plan program. Planned Growth Strategy assumes that between $518 million (Trend Scenario) and $415 million (Balanced Scenario) will be spent to support growth over a 25-year period. However, the transportation network actually degrades significantly over this time, from 317 congested lane miles in 1995, to 1,110 congested lane miles in 2020. This is an indication that addressing transportation needs should include a variety of approaches related to land-use and multi-modal transportation in addition to spending for street capacity.

Figure 14 also shows the Long Range Major Street Plan Study Corridors and arterials that have not been constructed but for which funding is secured.

Summary. The information presented on development "Inducements" related to built urban infrastructure suggests the following conclusions: future urban growth occurring in the part of the metropolitan area either fully served or partially served with infrastructure is more cost-effective, residential development is supported in the older parts of the metropolitan area where there are more employment opportunities, employment locations are supported in newer parts of the Albuquerque area where there is more housing and in locations where there is more capacity in the built roadway system. These conclusions are consistent with public preferences as indicated by the Shared Vision Town Halls, the citizen surveys, and with adopted City and County policies.

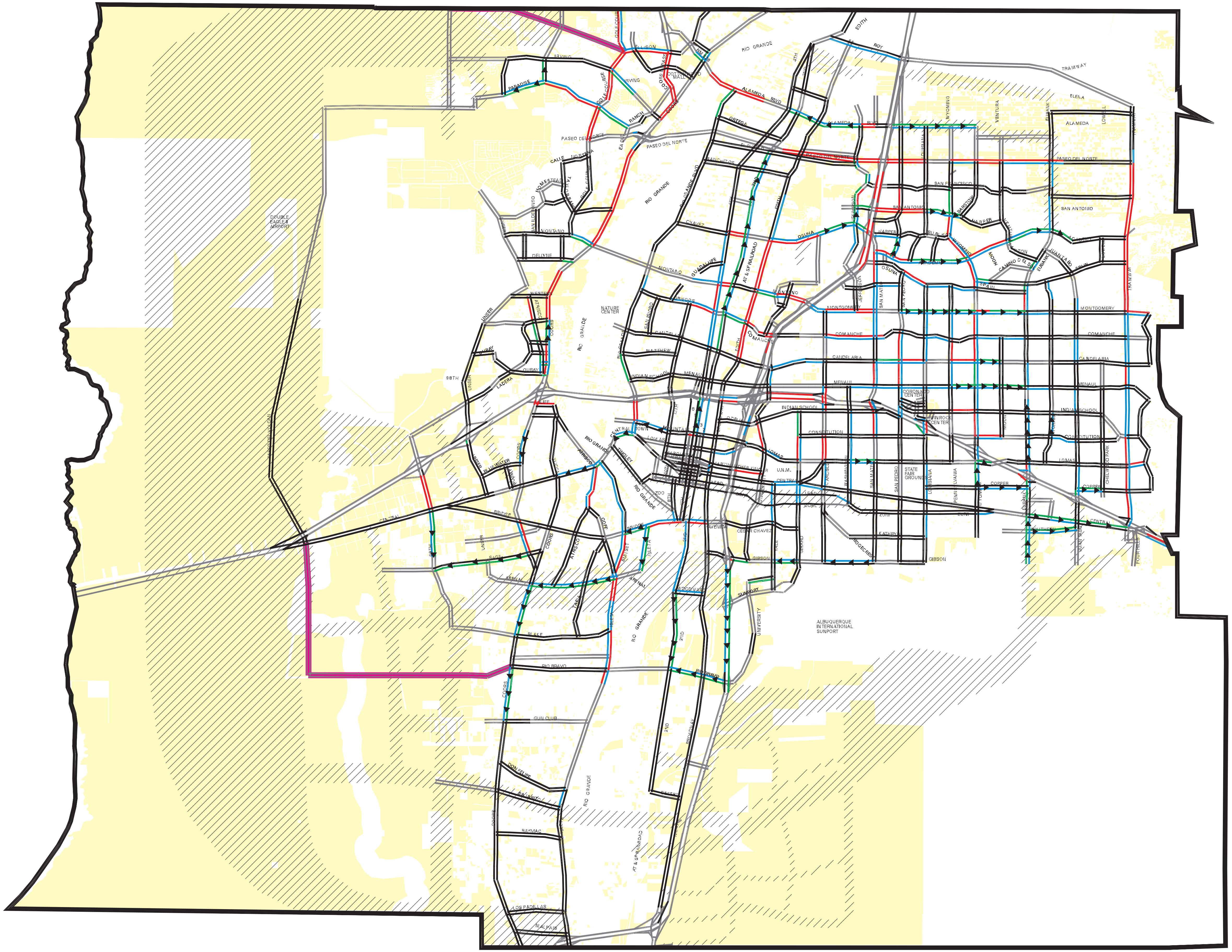
As with "Development Constraints," each parcel of land was scored on Development Inducements. Tracts that were near existing water, sewer, street, and storm drainage infrastructure were assigned a "1" for each of these factors.

Development Inducements – Recent Construction Activity

Current development patterns are based on a number of conditions including but not limited to: consumer preferences; availability and price of land; presence of infrastructure; the subdivision and development approval process; development standards; governmental charges such as Impact Fees (Utility Expansion Charges), exactions, and permit fees; and conditions in existing neighborhoods. Figure 15 indicates recent construction activity (as represented by building permits) for single family houses, multi-family projects, and commercial development. The figure also indicates recently approved subdivisions, that are considered to be likely sites for future development.

The pattern of recent development provided a starting point for the Preferred Alternative. In other words, past development was considered to be an important indication of where growth would occur in the future and how much change might be possible over a 25-year period to reflect public preferences and policies as contained in the Preferred Alternative. Properties in recently approved subdivisions were also assigned a "1" score for inducements.

In order for the Preferred Alternative's pattern of future population and employment growth to reflect public preferences, adopted policies, and relative ease of development, the Study Area was divided into 14 subareas for the purpose of reviewing past development patterns as represented by building permits. Town Hall participants recommended that the Planned Growth Strategy "Identify desired development zones."[108] The city of



Development Inducements

Major & Minor Roadways

Legend

- Undeveloped Land
- Long Range Major Street Plan Study Corridors (Future Areas for Right-of-Way Acquisition as identified by the MRGCOG)
- Arterial: Funding Committed
- No Data or Pre-1996 Data
- AM & PM Congestion
- AM Congestion Only
- PM Congestion Only
- Neither AM or PM Congestion

NORTH-SOUTH ROADWAYS
Rightside = North Bound
Leftside = South Bound

EAST-WEST ROADWAYS
Topside = West Bound
Bottom = East Bound

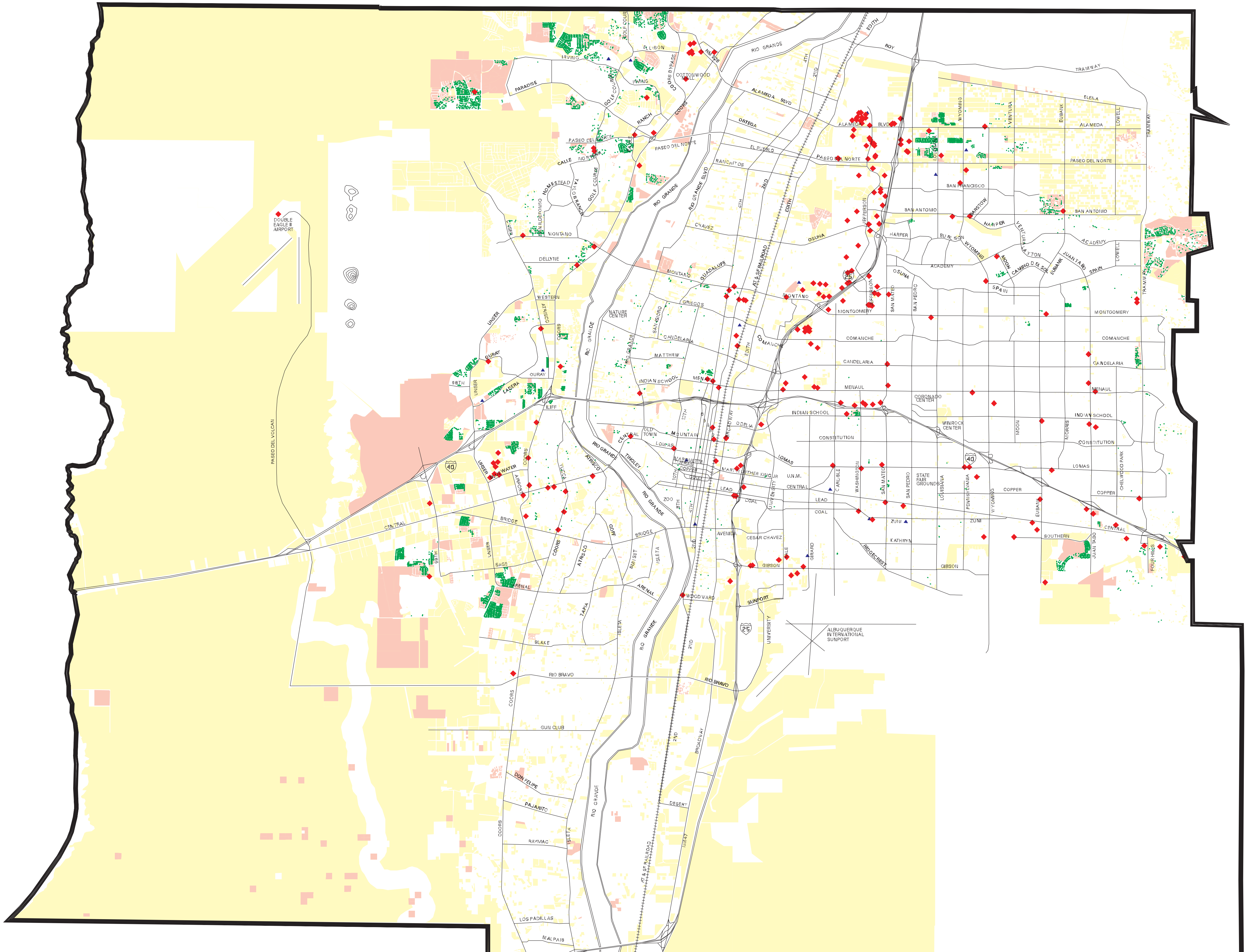
Red Lines Indicate No Street Capacity

Arrows Indicate Direction of Desirable Employment Locations

Figure 14

Planned Growth Strategy

Scale: 1 inch = 2 miles
Map Printed January 2001



Development Inducements

Recently Approved Subdivisions
& Building Permits

Legend

- Undeveloped Land
- Recently Approved Subdivisions
- Single-Family Residential Building Permits New Construction July 1997 - June 1999
- Multi-Family Building Permits New Construction July 1997 - June 1999
- Commercial Building Permits New Construction July 1997 - June 1999

Figure 15

Planned Growth Strategy

Scale: 1 inch = 2 miles
Map Printed January 2001

Albuquerque, generally speaking, was divided into three subareas: City Boundaries from 1891–1959 (hereinafter "1960 City Limits"), City Boundaries from 1960–1979 (hereinafter "1980 City Limits"), and City Boundaries from 1980 to the present (hereinafter "1980 to Present"). This division was made in relation to public preference that Albuquerque's residential areas "grow through developing vacant land in the built up parts of the City" rather than "on vacant land that is now on the outer boundaries of the City" and that infill development on vacant and underutilized land was a high priority.[109] Common practice in Albuquerque has been to discuss infill as development within the 1960 boundaries of the City. Two other areas were defined as "County North Valley" and "County South Valley." This was done to reflect Town Hall participants' desires to protect and enhance existing conditions in the North Valley and South Valley and to reflect their Semi-Urban designation in the Comprehensive Plan. Four areas were identified to reflect areas with obsolete or premature subdivisions: North Albuquerque Acres, Atrisco, Volcano Cliffs / Horizon, and Pajarito.[110] An East Mountain area was established to reflect its unique identity, geographic situation, and the terms of the Planned Growth Strategy contract. Lastly, four areas were created for close-in lands in the unincorporated portion of Bernalillo County that did not fall into the other categories: Other County – Northeast; Other County – Southeast, Other County – Northwest; and Other County – Southwest. These areas are identified on Figures 3 and 18.

Table 10 below indicates the percentages of residential (as represented by dwelling units) and non-residential construction (as represented by square footage) that occurred in the 1995–2000 period within each of these areas.

Development Inducements – Centers and Corridors

There is substantial support as expressed in the Shared Vision Town Halls; the Comprehensive Plan; R-70, the Planned Growth Strategy "policy framework"; and in Bill No. R-55 for encouraging development in selected activity centers and along transit and transportation corridors. This subject is described above

Table 10 Residential and Commercial Development by Area, 1995–2000

Area	Residential Development (%)	Commercial Development (%)
City Boundaries: 1893–1959	7.6	35.6
City Boundaries: 1960–1979	15.6	20.1
City Boundaries: 1980 to Present	55.9	29.4
County North Valley	0.4	1.2
County South Valley	2.0	1.4
City/County Volcano Cliffs / Horizon	0.0	0.0
City/County Atrisco	4.7	6.7
City/County North Albuquerque Acres	8.9	4.6
County Pajarito	0.1	0.0
Other County—NE	0.7	0.0
Other County—SE	0.1	0.0
Other County—NW	0.0	0.0
Other County—SW	0.0	0.0
East Mountain	3.8	1.0

in "Centers, Corridors, and Downtown Redevelopment" in Section 1.3.4. Figure 16 contains the current draft City plans for the locations of these centers and corridors. Two noteworthy changes were made to the centers and corridors identified by the City Planning Department by the Planned Growth Strategy study. Planned Growth Strategy identified a strong rationale for encouraging job sites in the Southwest area and in the Southern part of the Planned Growth Strategy Study Area. Consequently, the Atrisco activity area was expanded and a new "Sunport Industrial Area" was designated to the west of the Albuquerque Sunport.

Combining Development Inducements and Constraints – Class 1 and 2 Vacant Land

The individual "Inducements" and "Constraints," as described above, were combined for each parcel in the Bernalillo County Parcel Base by the staff of the County Public Works Department. Two scores were produced for each parcel: one for total Inducements and one for total Constraints. This was done by assigning a parcel a score of "1" for each specific Inducement or Constraint as described above. If the Inducement or Constraint was not present for a particular factor, the parcel received a score of "0" for that factor.

The Inducement score could range between 0 and 10. This range was divided into three categories: High Inducements; Medium Inducements; Low Inducements. The Constraints score could vary between 0 and 7. This range also was divided into three categories: Low Constraints; Medium Constraints; and High Constraints.

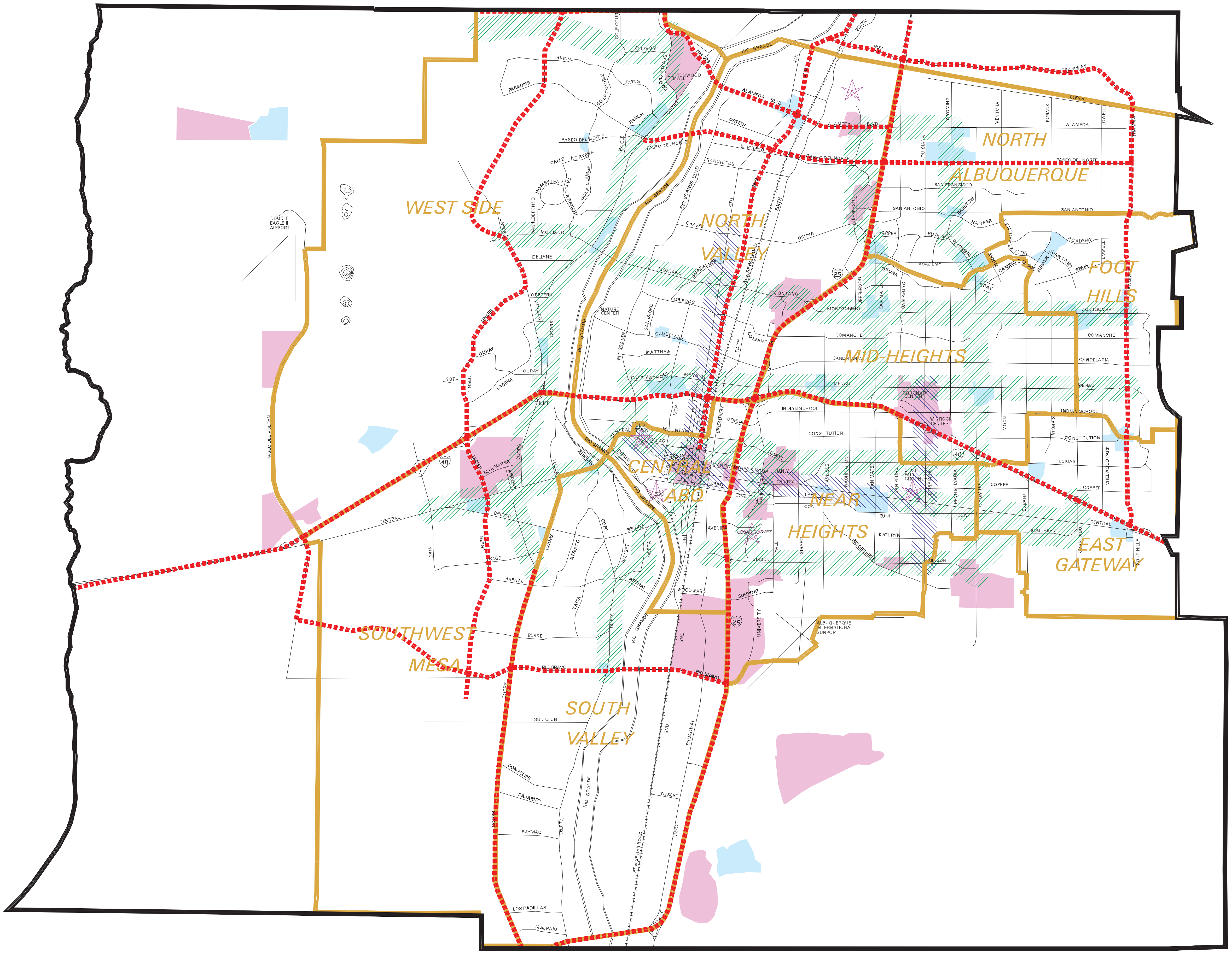
Each parcel could fall into any one of 9 categories in terms of Inducements and Constraints as shown in Table 11. These combinations of Inducements and Constraints were translated into 5 Class scores, with Class 1 score being the most likely to develop and Class 5 the least likely. Referring to this table, Class 1 land has High Inducements and Low Constraints. Class 2 land has Medium Inducements and Low Constraints. Class 3 land has either Low Inducements and Low Constraints or High Inducements and Medium Constraints. Class 4 land has Medium or Low Inducements and Medium Constraints. Class 5 land has High Constraints and either High, Medium, or Low Inducements.

The Planned Growth Strategy only considered vacant land in Class 1 and Class 2 as part of the inventory of developable, vacant land. Based on this classification system, there is a 27,250 acre inventory of Class 1 and 2 vacant land and in recently approved subdivisions. The following properties were removed from the vacant land inventory prior to scoring: tribal lands, National Forest Service land, acquired or future open space land, Kirtland Air Force Base, the Petroglyph National Monument, land with surface slope over 15%, and land identified as schools, cemeteries, parks, or golf courses.

Figure 17 shows all parcels of Class 1 and 2 vacant land by zoning category and recently approved subdivisions.[111] The red border shown in Figure 17 is the area served with urban infrastructure as defined in the Planned Growth Strategy

Table 11 Inducements and Constraints, Class Scoring Grid for Vacant Land

	Inducement Score		
Constraint Score	High	Medium	Low
Low	1	2	3
Medium	3	4	4
High	5	5	5



Development Inducements

Centers & Corridors

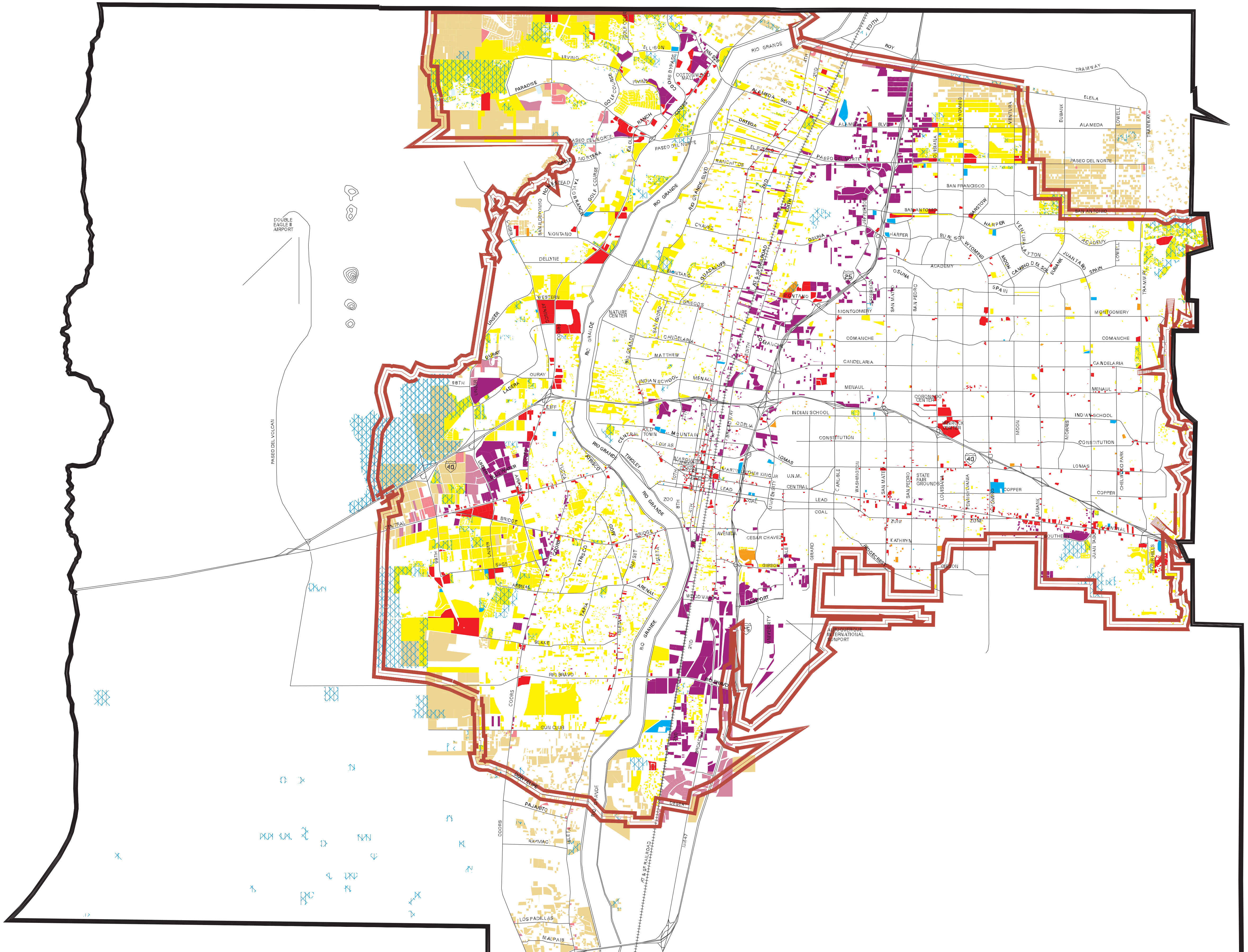
Legend

- Major Activity Centers
- Community Activity Centers
- Special Activity Centers
- Major Transit Corridors
- Enhanced Transit Corrdiors
- Express Corridors
- Community Planning Areas

Figure 16

Planned Growth Strategy

Scale: 1 inch = 2 miles
Map Printed January 2001



Vacant Land Classifications Class 1 & 2

Legend

Class 1
- Residential
- Multi-Family
- Commercial
- Industrial
- Institutional

Class 2
- Residential
- Commercial
- Industrial
- Institutional

Recently Approved Subdivisions

Area with Urban Infrastructure

Figure 17

Planned Growth Strategy

Scale: 1 inch = 2 miles
Map Printed January 2001

study. As one can determine from this figure, the vast majority of the Class 1 and 2 vacant land is located within the urban infrastructure service area. This service area is described in the next section.

Inventory of Developable Land by Area

Comprehensive Plan policy and Shared Vision Town Hall participants' preferences support that the community "build out and develop primarily in areas where there are existing services available as a first priority," "define the urban service area," and "identify desired development zones."[112] In order to accomplish this, the Planned Growth Strategy was required logically to create an inventory of developable vacant land and redevelopable parcels. It was necessary to determine the size of the inventory within the defined urban service area. It also was required to establish this inventory for subarea "development zones" of the Albuquerque metropolitan area that were established in a manner consistent with public preferences, adopted policy, and development conditions. The 14 development zones created are described above in "Development Inducements – Recent Construction Activity." This inventory was needed to understand the relationship between the capacity of vacant and redevelopable land within each subarea and the community's priorities for urban growth in order to create the Preferred Alternative.

Closely associated with the approach of identifying development zones is the concept of phasing and timing development. In the second Shared Vision Town Hall, participants indicated that "Growth areas need to be defined and prioritized in a more intentional way. There needs to be attention to phasing . . . which addresses where growth is to occur and at what point in time."[113] This program of setting objectives for growth phasing and timing was linked in the first Town Hall to the Capital Improvements Program. The report contains the following recommendations: "Set priorities for development at the edge of the City. Extend new roads and utilities to unserved areas in accordance with an agreed upon capital implementation plan" and the Capital Improvements Program "should include a clear schedule for building infrastructure, etc. for the next 20 years."[114] In "Role of government in urban growth planning" section above, it was noted that participants said that the Capital Improvements Program should be "tied to the growth strategy . . ."

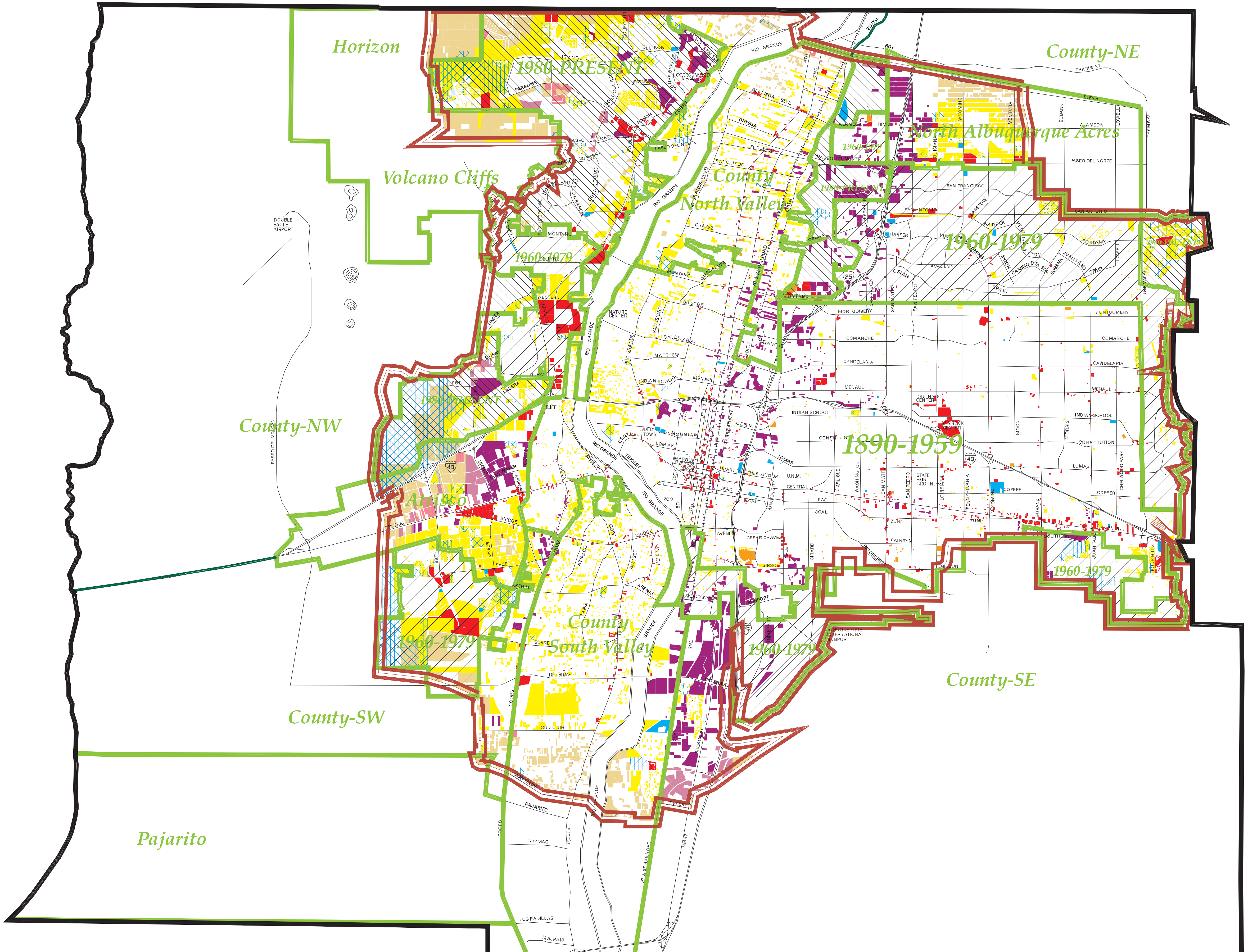
There is a very critical difference between a 50-year plan for growth and a phased 50-year plan for growth in terms of quality of life and efficient provision of infrastructure. The Planned Growth Strategy strongly rejects the notion that growth areas identified in a long-term time frame such as 50 years should automatically be served with urban infrastructure within the short term. This would have serious negative financial consequences and undermine the basic growth management policies supported by Town Hall participants and common planning practice.

It is reasonable to conduct this land inventory at the level of precision necessary to make policy recommendations for future urban growth. For example, if the land inventory found there was a sufficient developable land supply for a 25-year period, one can conclude that that serving new land with urban infrastructure is unnecessary for at least the next 10-year period. This approach informs policy and financial decisions for the next 10 years and allows policy-makers to reevaluate the situation at that future point. It is unnecessary to require that the Planned Growth Strategy accurately identify each and every developable and redevelopable parcel of land in the metropolitan area. It is likely that critics of the plan can find some individual parcels identified as Class 1 and 2 developable vacant land that are not suited to development. It is equally certain that there are properties not identified as developable or redevelopable that can be successfully developed. A good example of this is the former Digital Equipment Corporation site that, according to the selection criteria used, was not included in the inventory. In addition, underutilized properties, e.g., with low occupancy or lot coverage, have the capacity to support growth. The supply of developable and redevelopable land, meaning its capacity to support population and employment growth, also depends on market conditions that, in turn, are affected by governmental regulations and charges.

Figure 18 shows the parcels of Class 1 and 2 vacant developable land[115] and recently approved subdivisions according to the 14 subareas or development zones used in the Planned Growth Strategy. Figure 18 is provided to clarify the locations of the following subareas: County – NE, County – SE, County – SW, and County – NW.[116]

Figures 3, 17, and 18 also identify the urban service area, defined in a manner consistent with adopted Comprehensive Plan policy and Town Hall participants' recommendations. The public water utility and the New Mexico Utilities pressure zones with master plan infrastructure improvements present were used to define this area. This approach was taken for several reasons, including the practice of opening or making urban water service available, one pressure zone at a time; the high cost of opening a water pressure zone; and the tendency for urban water, sewer, and storm drainage service, as indicated by built master plan infrastructure, to be present in the same areas. The open water pressure zones are more extensive in the Southwest and South Valley areas compared to urban sewer service. This service area does not include the Tijeras Canyon area primarily because of the special, restricted nature of the service agreement in this area that is based on a joint powers agreement between the City, County, and Albuquerque Public Schools and only serves two schools by agreement.[117] The boundary does not include the eastern portion of North Albuquerque Acres. However, the Preferred Alternative assumes that growth will continue to occur in this area in a manner consistent with its Semi-Urban Comprehensive Plan designation. A cost-revenue analysis conducted by the City Public Works Department indicated that urban service to this area would be very unfavorable to the utility from a financial standpoint. The urban water service area is more constrained in the County South Valley area than the storm drainage service area. However, as with North Albuquerque Acres, the Preferred Alternative assumes that growth will occur in this area consistent with past development trends and its Semi-Urban and Rural designations. The urban water system boundary is more expansive than the storm drainage boundary in the Northwest area, indicating that service is appropriate in parts of the Piedras Marcadas basin.

The inventory of vacant and redevelopable land and land in newly approved subdivisions within the urban service area as shown on Figures 17 and 18 is described more completely in the Preferred Alternative summary chapter below. This inventory indicates that there are 5,965 developable acres in recently approved subdivisions, 21,288 acres of Class 1 and 2 vacant land not in recently approved subdivisions, and 5,208 acres of redevelopable land. Assuming that the metropolitan area requires approximately 900 acres of land per year[118] under the Preferred Alternative, this inventory represents about a 30-year supply without redevelopable land (27,253 acres) and about a 36 year supply with all identified acreage. These are average figures that need to be further analyzed in the establishment of the Preferred Alternative.



Developable Vacant Land & Subareas

Legend

Class 1
Residential
Multi-Family
Commercial
Industrial
Institutional

Class 2
Residential
Commercial
Industrial
Institutional

Annexed Areas
Annexed Areas from 1960-1979
Annexed Areas from 1980-Present

Recently Approved Subdivisions

Subareas

Area with Urban Infrastructure

Figure 18

Planned Growth Strategy

Scale: 1 inch = 2 miles
Map Printed January 2001