

WESTERN RURAL AREA DEVELOPMENT ASSESSMENT

**Prepared for the
Forsyth County Board of Commissioners**

December, 2010

**by the
City-County Planning Department
in consultation with the staffs of the
City-County Utilities Commission, Forsyth County Cooperative
Extension Service, and the Forsyth County Health Department**

*This document was provided to the Forsyth County Board of Commissioners for
informational purposes, but was not adopted*

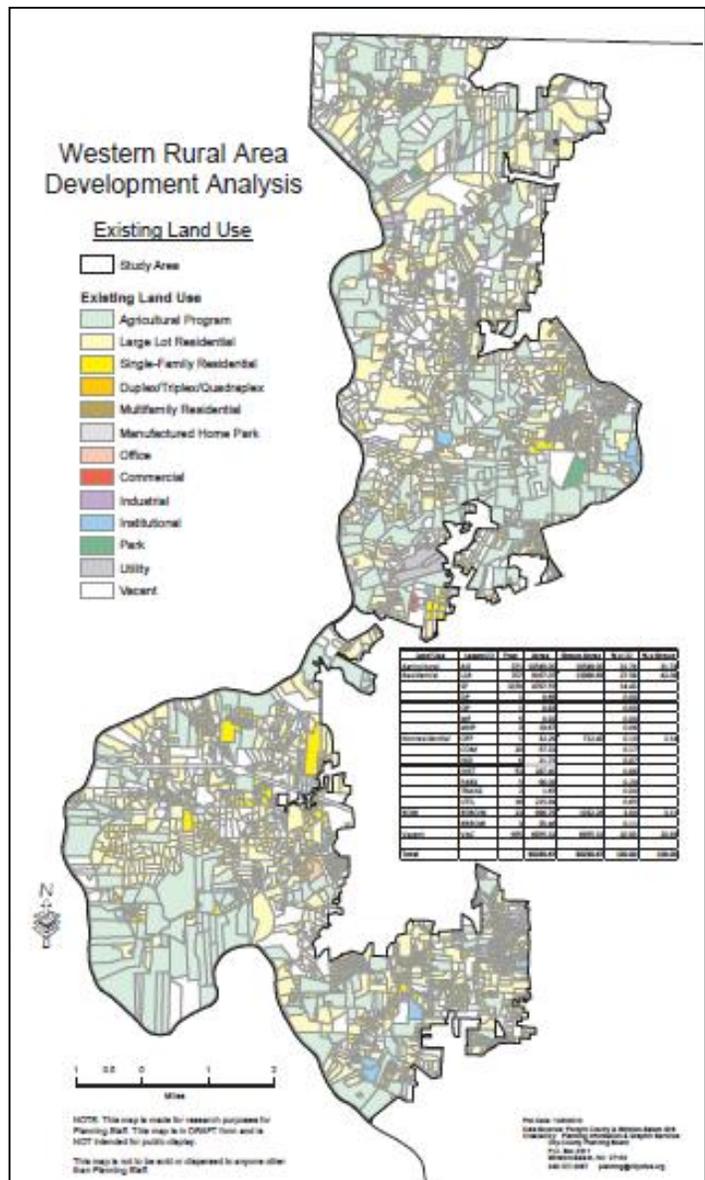
Forsyth County Western Rural Area Development Assessment

In summer 2010 the Forsyth County Board of Commissioners requested that the City-County Planning staff initiate a study on the development potential of the Western Rural Area of Forsyth County. This requested study was in response to concerns expressed by Clemmons, Lewisville and Tobaccoville about the potential loss of rural character in the western area of the county and their desire for some type of cooperative zoning overlay district that would govern in more detail the development of land in the area. The Western Rural Area is bounded by the Yadkin River to the west; the Forsyth County boundary on the north; the Tobaccoville, Lewisville, Clemmons and Winston-Salem municipal limits on the east, generally; and the Clemmons municipal limits on the south. The study area is 33,236 acres in size.

Land Use and Development Patterns

Existing Land Use Patterns

As part of the Western Rural Area development analysis Planning staff conducted a field survey of the area in the fall of 2010. All parcels were mapped according to their current use. These patterns are shown on the map to the right (full size versions of maps used in this study are included as an appendix to this narrative). Through this field survey staff found existing land use patterns in the Western Rural Area are predominantly residential and agricultural in nature. The largest share of the area (approximately 32%) is currently devoted to agricultural use. Large lot residential development (residences on five acres or more) makes up the second largest share (approximately 28%) of the Western Rural Area. The third most common development type in the study area is single-family residential development, which makes up approximately 14% of

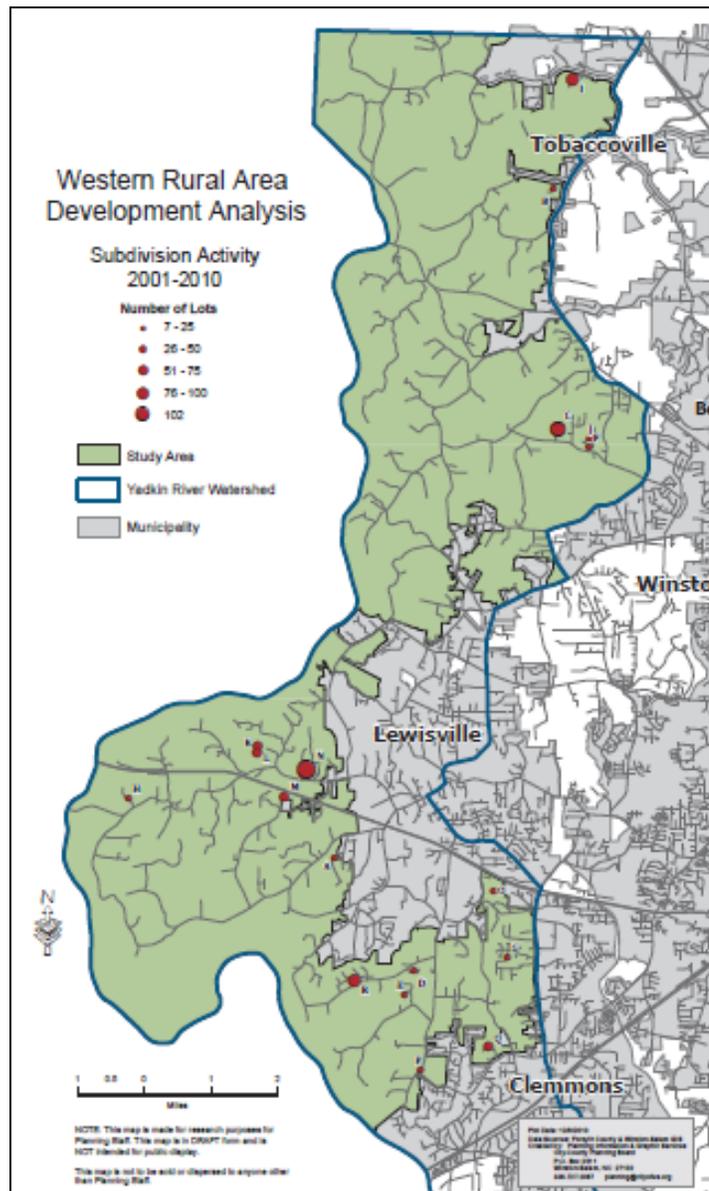


the area. These three land uses account for approximately 74% of land in the Western Rural Area. Agricultural and residential uses are present throughout the study area, with conventional residential subdivision development occurring close to the municipal limits of Clemmons, Lewisville, and Winston-Salem. An additional 21% of the area is comprised of vacant land. The remainder of the area consists of nonresidential development and public rights-of-way. Only 2% of land uses in the study area are nonresidential.

Recent Subdivision Activity and Demand

Many current residents of this area have chosen to live in the Western Rural Area due to the rural, large-lot character of the area. Even so, only 18 new subdivisions have been approved in the Western Rural Area since 2001. These new subdivisions exist throughout the area with the majority being located near the municipal limits of Lewisville and Clemmons.

Most of these subdivisions have few lots, and only four have more than 40 lots. Overall, 569 lots have been approved on approximately 717 acres. Approximately 70% of these lots are still vacant. The overall average density of new subdivision lots approved in this area is 1.26 units per acre. Sewer is generally not necessary to serve development at such low density. The Lissara development is the largest single development to be approved in the Western Rural Area since 2001. This subdivision was approved in 2009 and contains 102 lots on approximately 150 acres. Most of these lots are large estate-style lots.



Demand for subdivision lots in the Western Rural Area has not been particularly high over the last decade. At the absorption rate of lot development, the current supply of approved lots should be sufficient to meet demand for at least the next decade.

Filter Mapping Process

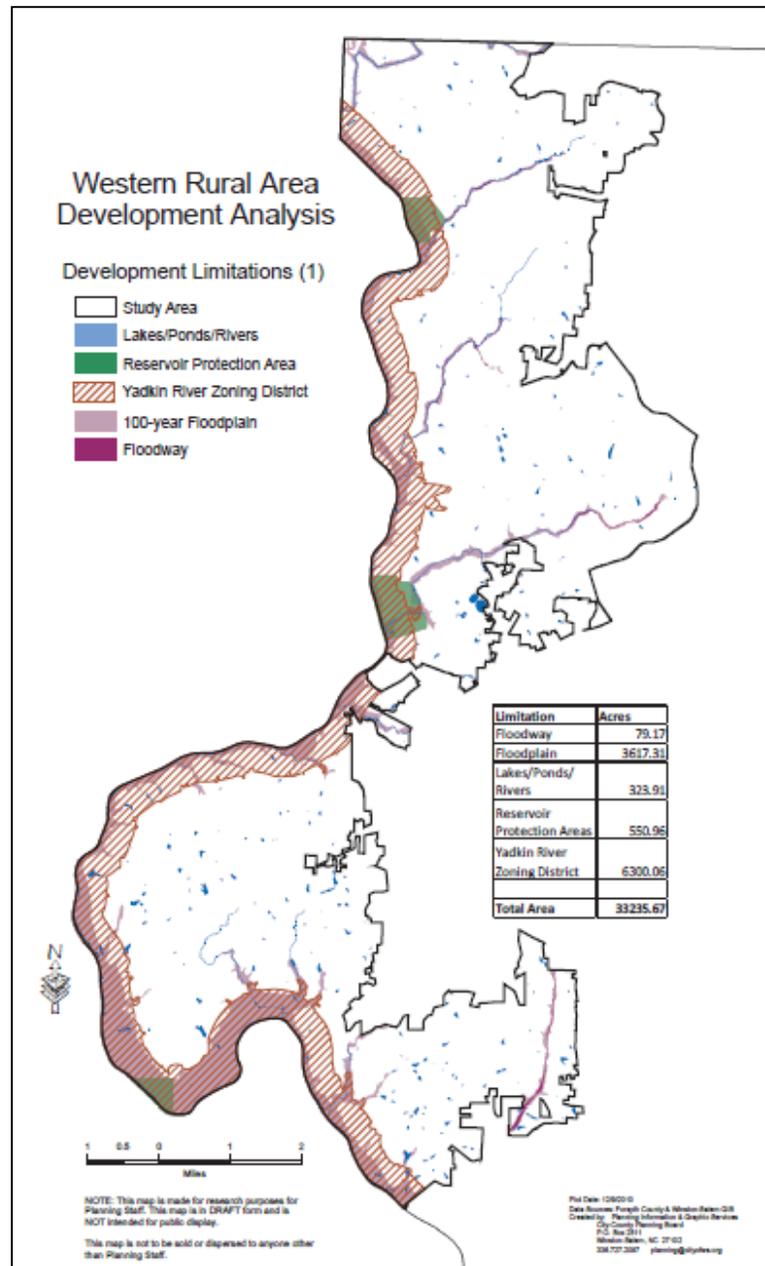
To determine how much land is available for future development in the Western Rural Area, Planning staff completed a filter mapping process using Geographic Information Systems (GIS) analysis. Using GIS, land with a variety of development limitations was mapped and separated from the remaining developable land in the study area.

Water-Related Limitations

The first filter applied to the Western Rural area was removing water-related development limitations. Land in lakes, ponds and rivers; land in the reservoir protection area; land in the Yadkin River (YR) zoning district which extends approximately half a mile from the Yadkin River and requires a minimum lot size of 3 acres; and land in the 100-year floodplain and floodway was identified and removed from the developable area. Land with these features exists throughout the study area.

Other Environmental Limitations

Next, land with steep slopes (slopes greater than 20%) and poor development soils were identified. These features make large-scale residential development very difficult and as such land with these features was filtered out of the study area. Steep slopes are more common in the northern study area, while poor soils are prevalent in the southern half of the area. However, both features are present throughout the study area.

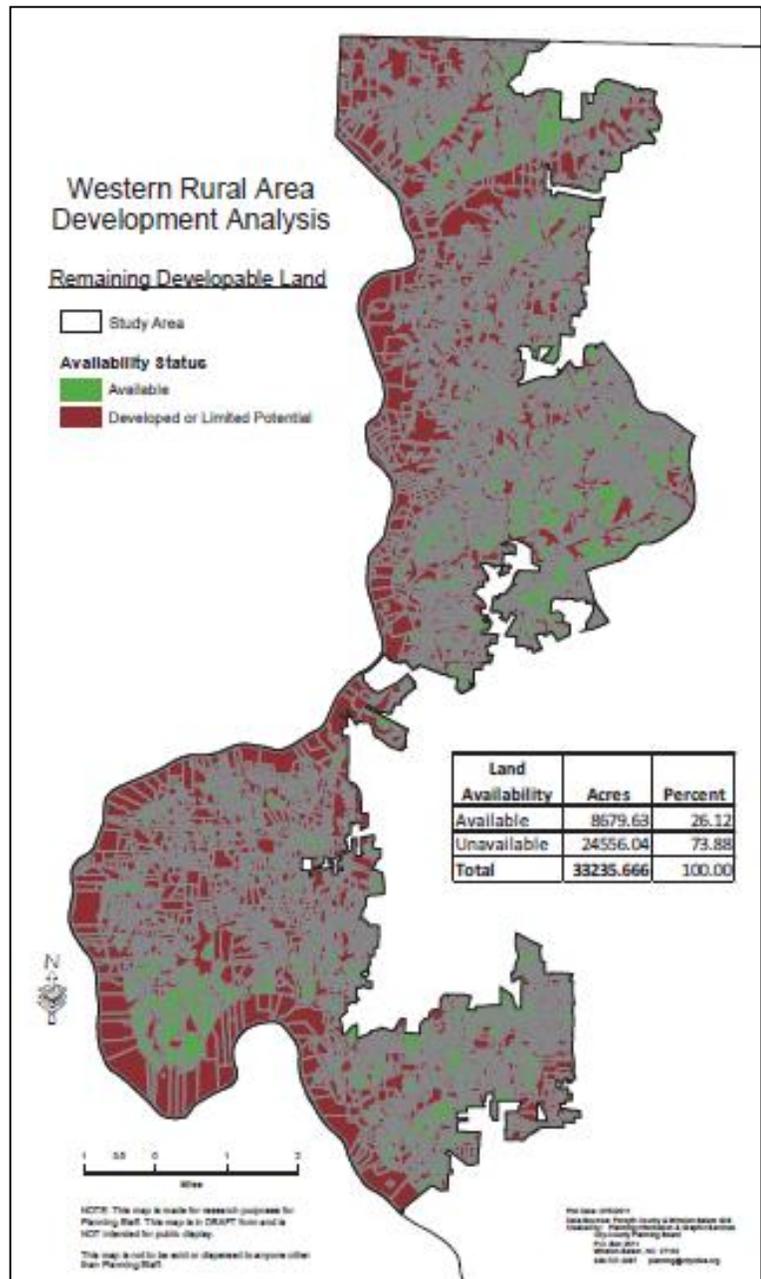


Land Use Limitations

In the next phase of the filter mapping process developed land, vacant land, and land in agricultural programs were identified, with developed land being filtered out of the developable land area. Agricultural land (land which is currently in the agricultural property tax deferral program) was considered developable for the purpose of this study because such land could be converted into subdivision land if necessary back taxes were paid. Developed land includes any parcel with a structure on it, except for residential parcels over 5 acres in size with investments of less than \$300,000 (large lots with lower-valued structures are better candidates for subdivision redevelopment). Agricultural land exists throughout the study area, but concentrations exist in the West Bend area adjacent to the Yadkin River and in the northern half of the study area. Developed land is scattered throughout the area.

Future Development Area Analysis

After each of the three filter analyses above were completed, the aforementioned development limitations were overlaid on the Western Rural Area boundaries using GIS analysis, with the land remaining representing the most likely future development sites. Based on this analysis, approximately 26% of the Western Rural Area, or 8,679 acres, is without significant natural constraints for future development. This land is scattered throughout the study area, but more developable land exists in the southern and northeastern parts of the area. The widespread presence of steep slopes, poor soils, water features and other factors has made this remaining developable area very fragmented. These patterns demonstrate why the development which has occurred in the area is



limited to scattered large-lot residential subdivisions served by on-site septic tanks. Based on these patterns, there is currently no area in which extending sewer would appear to be financially justifiable to the City-County Utilities Commission.

Sewer Service Constraints

Public Sewer Extension

Extension of public sewer to the Western Rural Area would be very expensive. An expectation of significant future development in the area that would have the ability to pay for the extensions would be necessary to make a business case for this extension. Recent demand in this area has been for larger lots which do not require sewer service. While some developers have expressed interest in developing subdivisions which cluster homes on smaller lots and preserve the remainder of a site as community open space, many such subdivisions would be necessary to justify the cost of sewer extension and this cost would be passed on to the developer and residents of those subdivisions. Depending upon their scale, such subdivisions could be served by package treatment plants or individual septic systems within large common areas as alternatives to gravity sewer.

The City-County Utilities Commission believes that future sewer extension in the Western Rural Area is unlikely in the near future. The main outfalls and interceptor lines nearest this area are undersized to accommodate any westward expansion. Existing sewer lines are sized to accommodate the drainage basin as determined by the 1984 Facilities Master Plan. This plan did not intend to serve the drainage basins that drain directly to the Yadkin River. Therefore, the existing lines do not have capacity to accommodate both infill development within the existing Muddy Creek sewerage basin and additional areas outside that basin. New outfalls and interceptors would have to be constructed parallel to existing sewer lines, and pump stations would have to be enlarged to accommodate additional capacity. The cost of these improvements would have to be absorbed by developers of new subdivisions and homeowners in the Western Rural Area. Furthermore, treatment plant capacity is not sufficient to handle both infill development in the Muddy Creek basin and new development outside the basin, which represents an additional major expense. The Utilities Commission staff estimates that serving this area with sewer would cost between four and ten times more than existing sewer in Forsyth County on a per lot basis. Additionally, the Utilities Commission does not have a policy of proactively expanding sewer. Any sewer in this area would be the result of a developer, citizen or municipality petitioning the Commission to expand the current system. A business case would have to be made for such an expansion. Also, a policy issue exists because since the Western Rural Area is outside the Muddy Creek basin, it is not recommended as a priority for sewer service in the *Legacy* Comprehensive Plan.

Private Sewage Disposal

While public sewer extension is probably unlikely in the Western Rural Area, private sewage disposal options do exist. According to Forsyth County Environmental Health staff, individual wastewater systems located on individual home sites would be the preferred option, however utilization of open land (off-site easements) would also be an option for developers to explore for the installation of wastewater systems. This option would be utilized by developers when a portion of the soils in the proposed subdivision prevent wastewater system installations, the off-site easement option would allow the developer to construct homes on the unsuitable soil sites and pump to the off-site easement area with the suitable soils. This method of sewage disposal could be used with conventional subdivision design or with conservation design which clusters land and preserves open space.

An alternative option to subsurface wastewater treatment installations would be package treatment plants which are regulated by the Department of Water Quality (DWQ). Package plants are not usually viable options for sewage disposal due to state regulations which make operation and installation costs of these systems very high. It is likely that both public and private treatment plant regulations in North Carolina will become even more stringent over the next 5-10 years. Given this information, the Forsyth County Health Department feels wastewater system installations are a viable option in the Western Rural Area.

Agricultural Concerns

Despite some interest in creating subdivisions with small lots and adjoining open space, the installation of sewer in this area would more likely lead to the development of suburban-style subdivisions with lots ranging from half an acre to an acre in size. Such development may create more difficulties affecting the viability of agriculture in the area. According to Forsyth County Cooperative Extension staff the Western Rural Area still is home to active agriculture. Prospects for agriculture remaining a significant factor in the area are good if current conditions remain in the area. However, suburbanization of the area may make it more difficult for farmers to continue their activities.

Conclusion

From this analysis, it is apparent that the Western Rural Area has a number of factors which significantly influence and limit its development potential. These factors can be summarized as follows:

- The area is sparsely developed, with 74% of the land either with significant environmental constraints, currently developed, or consisting of lots greater than 5 acres with a home valued greater than \$300,000 on it.
- Significant natural constraints of water-based limitations, soil limitations, and steep slopes affect a large amount of the area.

- The remaining land that is least constrained for development is scattered, with few concentrated areas.
- Extension of public sewer into this area would be very expensive, possibly prohibitively expensive due to the need to duplicate outfall and interceptor lines where there is no capacity, the need to build outfalls, the need for pump stations, and the need to expand treatment plant capacity.
- The most viable private sewer treatment option appears to be septic tank, which favors a very low density of development.

These factors taken together will keep both the rate of development low, and the amount of development low. It also appears that the absorption of already subdivided lots is low, and there is already a several year supply of lots available to build on.

Based on these findings, the Planning staff does not believe that a regulatory effort is warranted that would create an overlay district placing further controls on the development of land in the Western Rural Area beyond the constraints which already exist. The combination of natural constraints, difficulties in providing sewer service, and existing large lot and agricultural zoning prevalent in this area should ensure that the current rural character stays largely intact over the foreseeable future.