



Green Communities



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How To Do A Build-Out Analysis

Build-Out

Residents often assume that their community's zoning regulations will protect them from inappropriate development, but conventional zoning and subdivision regulations typically allow development on *all* buildable land. A build-out analysis allows a community to test out its existing regulations -- to glimpse at its possible future when all land is developed to the maximum extent allowed under law. Build-out is a tool that shows the consequences of not revising existing land-use regulations. This may result in a call to action. In any case, it helps officials make better decisions in planning the future.

Build-out is not just for communities with vacant land. Any community with property that has not yet been developed to the full extent allowable under law can benefit from a build-out analysis.

The basics of a build-out analysis

There are two phases in doing a build-out analysis. Phase I visually depicts changes on a map. Phase II quantifies the impact of the changes. In both phases, a computerized geographic information system (GIS) can help. Finally, a summary brings together the critical information and conclusions in an easy-to-understand way. Sketches of possible future street scenes by a graphic artist can help convey the information.

Phase I

For Phase I, construct a base map of your community mounted on hard backing with clear overlay sheets of possible development.

The **base map** should show the basics, such as:

- the perimeter of the community
 - north arrow
 - scale of the map
 - existing roads
 - surface water (lakes, rivers, streams)

plus:

- **Delineate land which cannot be developed** due to public ownership, deed restrictions, utility easements, or natural factors such as wetlands, floodplains, or steep slopes (but do not include steep slopes which could be graded into developable land).
- **Delineate undeveloped land which may be developed.**
- **Delineate land which has already been developed with existing structures and lot lines.**
- **Overlay sheets** take a closer look at the land that may be developed or developed further.

For land zoned residential that has not yet been developed, apply road standards and minimum lot size and frontage requirements as if the land was developed to the maximum extent allowable -- in other words. pack in the largest number of housing units allowed and do it in a way that does not take into account environmental, economic, or quality of life impacts. Likewise, for land zoned

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commercial, jam in the largest number of buildings and depict uses that are potentially the most damaging.

Analyzing the possible future of land that already has had some development takes more effort and investigation. For each property you will need to determine:

- How is it zoned? Sometimes houses sit on land zoned commercial and businesses sit on land zoned residential. Owners may not even realize how their property is zoned.
- Can the lot be subdivided?
- Can the buildings be enlarged and by how much?
- If a home, can it be converted into a multi-unit residence by adding a garage / upstairs / basement apartment, or totally converted to an apartment building?
- If a home, could it contain an in-home medical office? Could it be converted into a fraternity house or student housing?
- If a home, could it be converted to a commercial or industrial use such as a restaurant, nightclub, school, auto body shop, retail store, movie theater, government offices, manufacturing facility, landfill or incinerator, hospital, church, gas station, train station, amusement park, mortuary, etc.?
- If a business, could the business be expanded? For instance, could a restaurant currently open only for dinner be expanded to be open for breakfast, lunch, and dinner? Could a restaurant currently operating on the first floor be expanded to include the second-floor? Could a restaurant expand its business to include take-out?
- If a business, could it be changed to another, more intensive use? For instance, could a neighborhood movie theater without a parking lot be converted into a tri-plex? Could a senior citizens clubhouse be converted into a nightclub?

This analysis of already developed properties can be further complicated by "grandfathering" -- the property can be used differently than allowed under law when the use of the building existed before the current zoning laws came into being. For instance, a house may have been converted into a restaurant before laws were passed that restricted where restaurants could be placed and before laws that required off-street parking. Often this grandfathering will pass on to subsequent owners; sometimes it will not.

A further complication which needs to be considered is the possible consolidation of adjacent parcels. For instance, adjacent lots, each containing a small store, might be able to be consolidated to allow the construction of a superstore.

Other issues to consider in a build-out analysis include:

- allowable building heights
- allowable noise levels
- allowable hours of operation
- need for an availability of off-street parking (Are there limits to how many vehicles a resident or business may park on the street?)

Communities which have a high percentage of undeveloped or underdeveloped land may want to do staggered overlays showing the possible progression of growth. For instance, the first might show growth along major roads and on large parcels. The next overlay might show growth on the next most desirable parcels. The last could show growth on the least desirable parcels.

Phase II

Phase II is a quantitative analysis of the impact of the changes detailed in Phase I. Numbers to calculate might include changes in:

- percentage of impermeable surfaces
- acreage farmed
- population / number of school-age children
- housing units / housing density
- traffic
- tax revenues
- demands on schools, water supply, sewage, electrical production, police force, etc.

For additional information on conducting a build-out analysis:



[Manual of Build-Out Analysis](#), [EXIT Disclaimer](#) Center for Rural Massachusetts, 1990 - Available through mail order.

"[Shaping Future Development: The Role of Current Zoning Executive Summary \(PDF\)](#)" [14 pp., 627KB]

This study measures and describes all future development permitted in the central and western municipalities of Montgomery County, PA under current zoning ordinances.

You will need Adobe Acrobat Reader, available as a free download, to view some of the files on this page. See [EPA's PDF page](#) to learn more about PDF, and for a link to the free Acrobat Reader.

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