

APPLYING THE FRAMEWORK

The purpose of applying the framework in a design is to evaluate its effectiveness as a learning procedure for sustainable development. The application of the framework for this thesis is the re-design of the Top-of-the-World (TOW) community in Blount County, Tennessee. Also, for comparison, a re-design or build out scenario for the TOW community is developed without using the sustainable development framework.

Top of the World Community

TOW is located in the heart of the southern Appalachian Mountains and consists of approximately 1480 acres. The community is adjacent to the Great Smoky Mountains National Park to the east and is paralleled by the Foothills Parkway to the west. The community is composed of primarily single-family housing that includes both local and weekend residents. Water and sewer services for TOW residents are private.

The development rate of TOW has been significantly less than many surrounding mountain communities due to its remote location. The Foothills Parkway is, however, being extended to the Pigeon Forge – Gatlinburg, Tennessee area. This will certainly have an impact on the direction of the community. The community residents are concerned that the increased pressure of development might negatively affect the quality of life within the community. It is because of these concerns, and the fact that a project with similar scope and circumstances could be in a large percentage of landscape architect's offices that applying the sustainable development framework to the re-design of the TOW community is justified.

The first step of the framework is research. The research component consisted of developing an understanding of sustainable development issues and concerns. For example,

recognizing that sustainable development includes environmental, social, and economic factors was the beginning step of the research module.

An inventory and analysis of the TOW community was conducted using the Analysis component of the framework. A checklist is provided to serve as a guide that identifies topics that should be analyzed by the designer before a design is developed. Applying the analysis checklist, in the framework, to the TOW community is beneficial to the designer, because it reinforces consideration of important factors that should be analyzed.

Applying the design component of the framework consisted of incorporating the information gathered in the Research and Analysis components and by addressing the design considerations in the design module.

Analysis Checklist:

CONSIDERATIONS		CONSIDERATIONS
<i>HYDROLOGY</i>		<i>NATURAL FEATURES</i>
Watershed		Topography
• Drainage Patterns		• Landform
• Land -Use		• Elevations
Flood Plains		• Drainage Patterns
• Natural or Channelized		• Slopes (Condition)
• Built Structures		• Aspect
Rivers & Streams		Wildlife
• Geomorphology		• Habitat
• Class/Order/Reach		• Quantity & Quality
• Water Quantity & Quality		• Ecology
Lakes		• Species
• Natural or Man - Made		• Diversity & Distribution
• Water Quality		Climatological
• Primary & Secondary Uses		• Average Rain & Snow
Wetlands & Marshes		• Wind
• Classify (Type)		(Intensity and Direction)
• Natural or Man - Made		• Solar
• Health		• Insolation
• Biodiversity		• Temperature
<i>SUBSURFACE</i>		(Highs, Lows, Mean)
Aquifer(s)		<i>SOCIAL</i>
• Depth		Visual & Human Interest
• Quantity & Quality		• Scenic Quality
• Drinking Source		• Land Characteristics
• Critical Recharge Area		• Views & Vistas
• Pollution Control		• Parks & Recreation
Soils		• Conservation Areas
• Classification		• Archaeology / Historical
• Fertility, Ph, Permeability		• Unique Physical Features
• Erosion Potential		• Inappropriate Land-Use
• Texture		• Pollution
• Bearing Capacity		Social Factors
Geological		• Cultural Amenities
• Geological History		• Public Services
• Natural Hazard Potential		• Density & Distribution
• "Karst" areas		• Employment
• Depth to Bedrock		• Health
<i>NATURAL FEATURES</i>		• Safety
Vegetation		• Cultural Patterns
• Diversity		Developed Land
• Plant Communities		• Buildings
• Invasive Plant Materials		• Engineered Structures
• Health		• Landscape Development
• Character		• Community Integrity
• Patches		• Transportation Network
• Corridors		• Utility Systems
		• Waste Disposal

Figure 4 Analysis Checklist

For examples of the design considerations refer to the Sustainable Development Framework web-page. When designing, each design consideration was at least 'considered'. Some were not applicable, while others were implemented in the design solution.

No-Framework Comparison

For comparison, a re-design for the TOW community was developed without using the sustainable development framework. Figure 7 the Master Plan and Figure 8 the Enlargement Plan that resulted is a competent design that addresses issues and concerns to the best of the

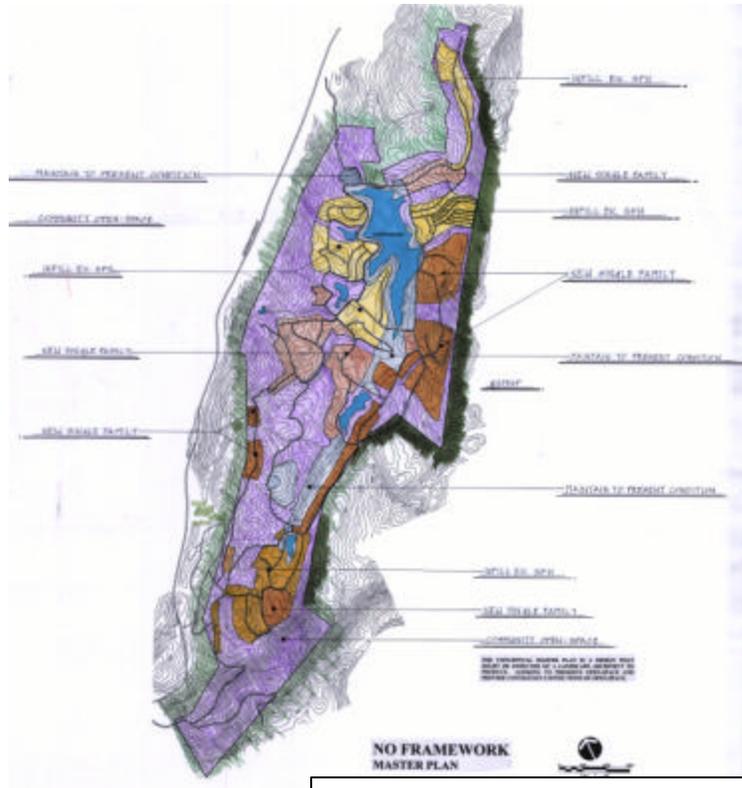


Figure 7 No-Framework Master Plan

designer's abilities and skills. For example, the amount of land developed is considerably greater in the design that does not use the sustainable development framework. This comparison demonstrates that the framework serves to enhance a designer's abilities and skills by increasing and refining sustainable design 'considerations'.



Figure 8 No-Framework Enlargement Plan