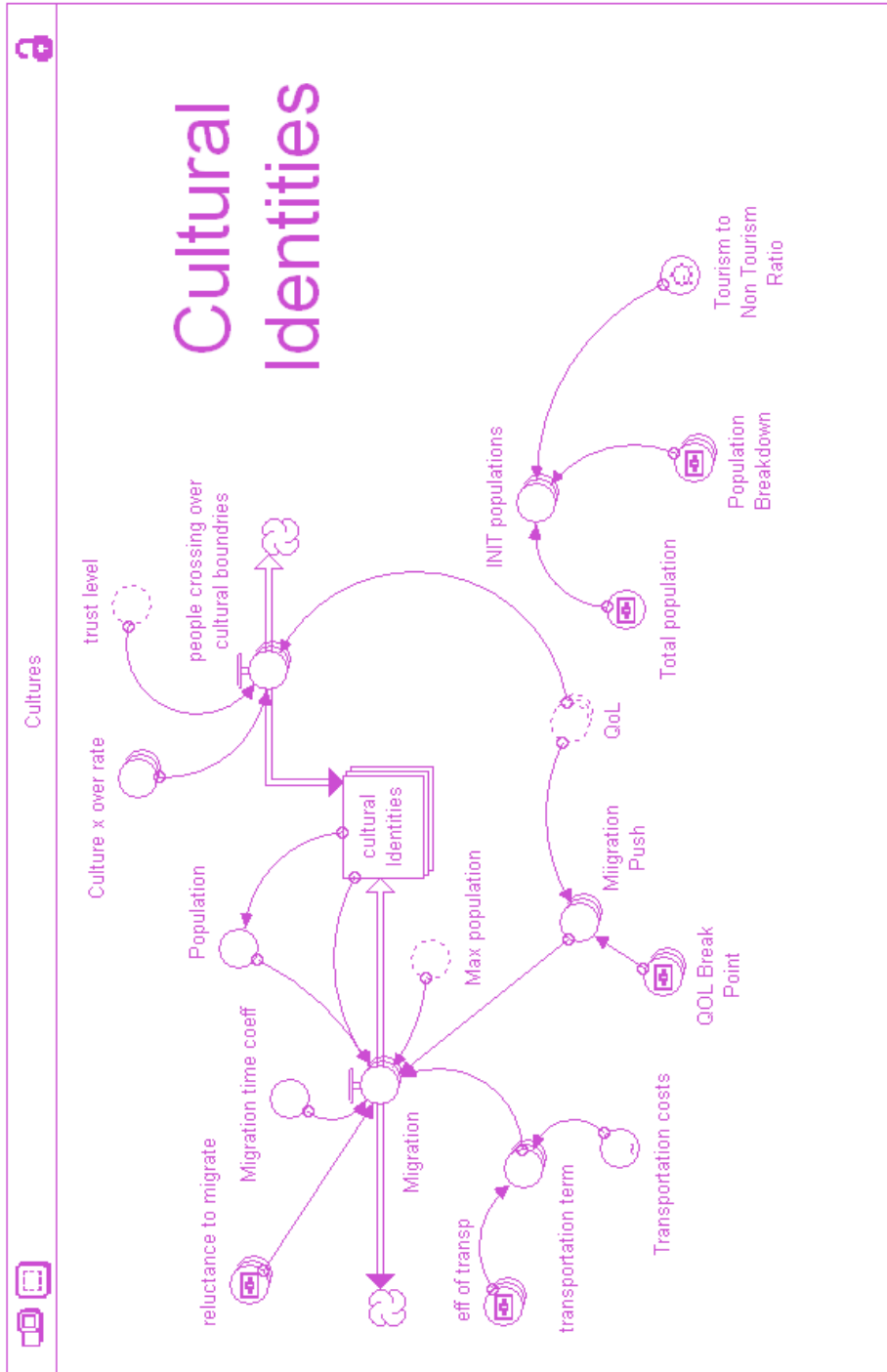


Recreation and Tourism In Grand Isle County: A Dynamic Model

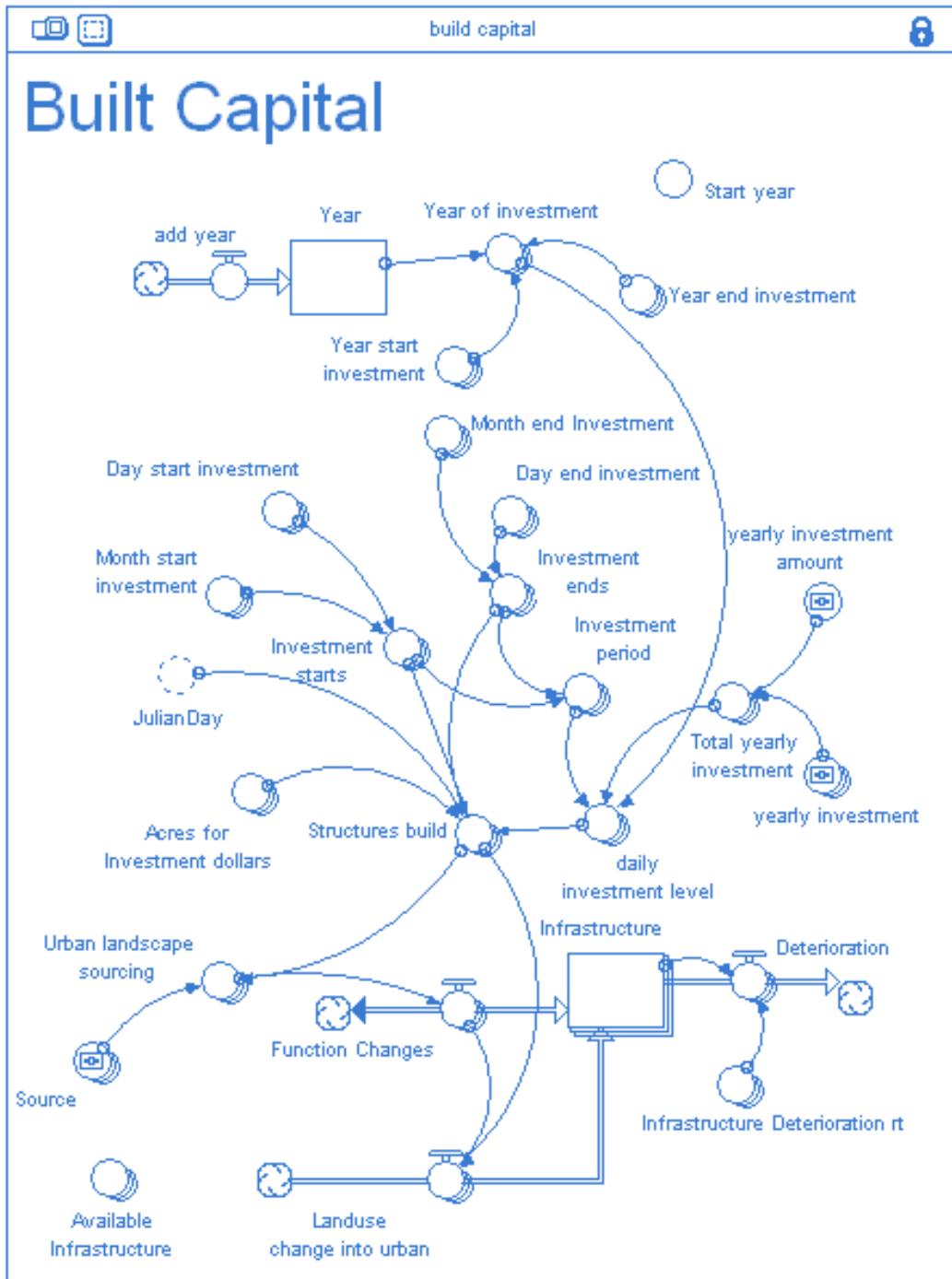
May 15, 2007 Workshop
Merchants Bank
South Hero

THE MODEL

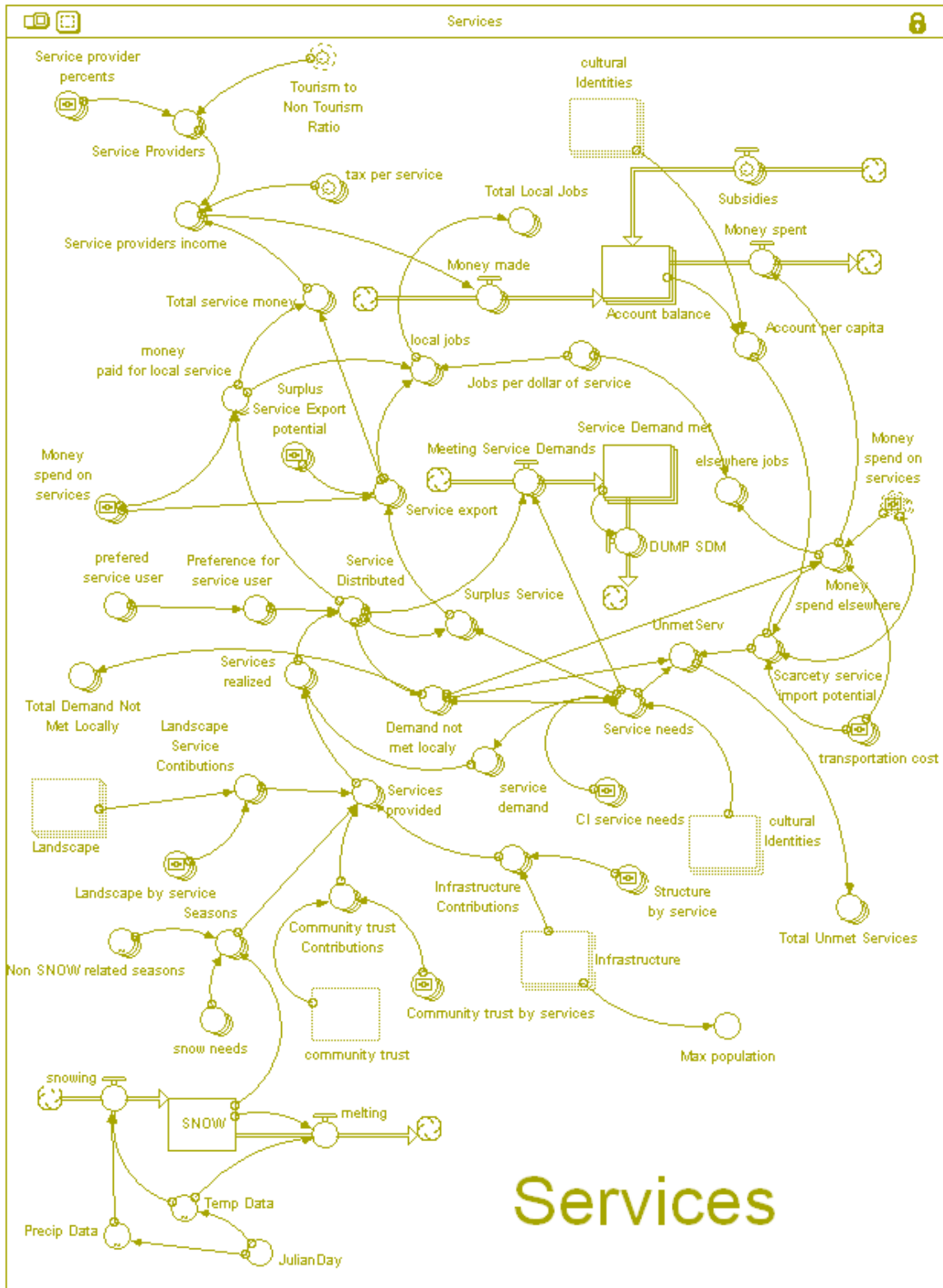
CULTURAL IDENTITIES



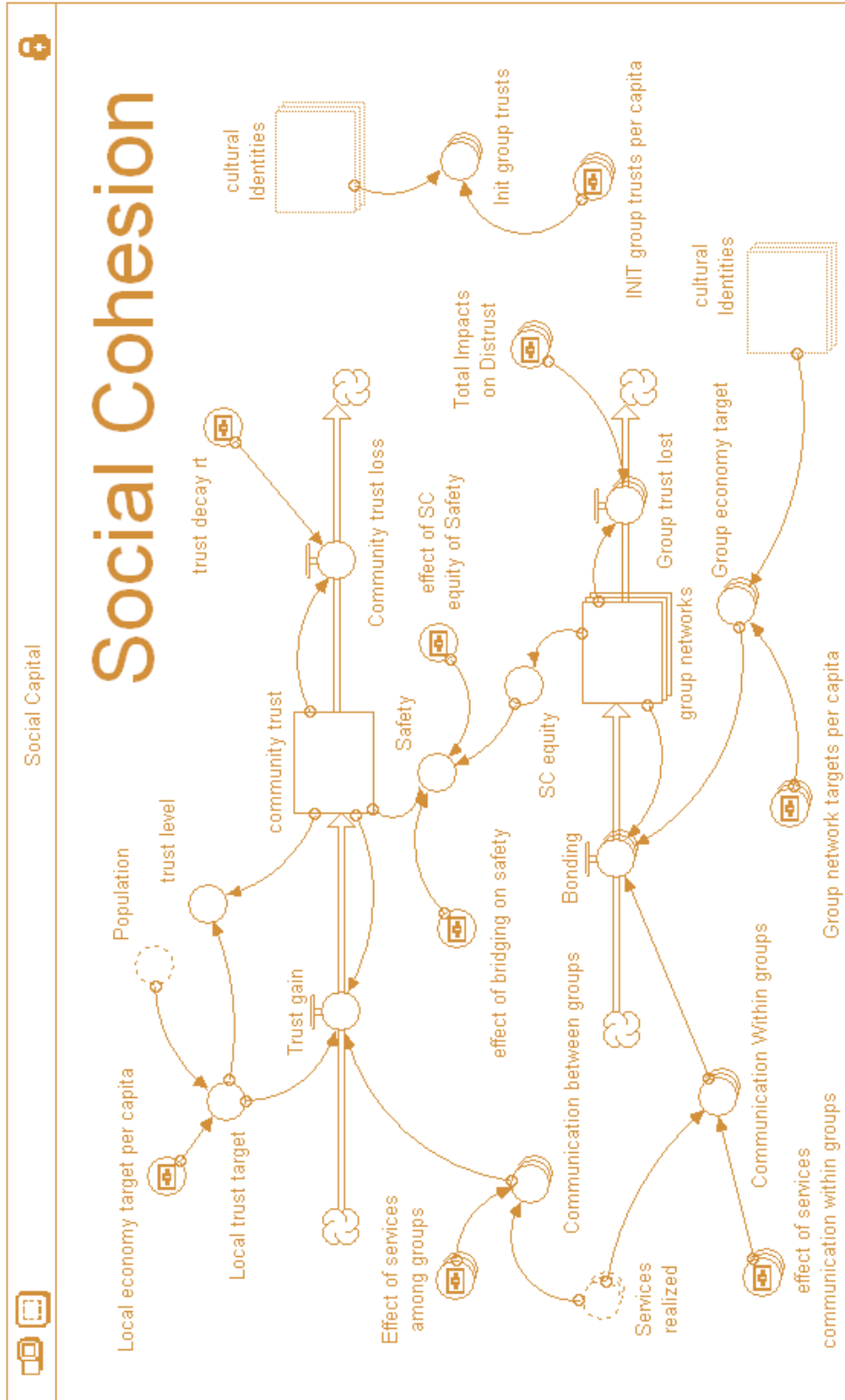
BUILT CAPITAL



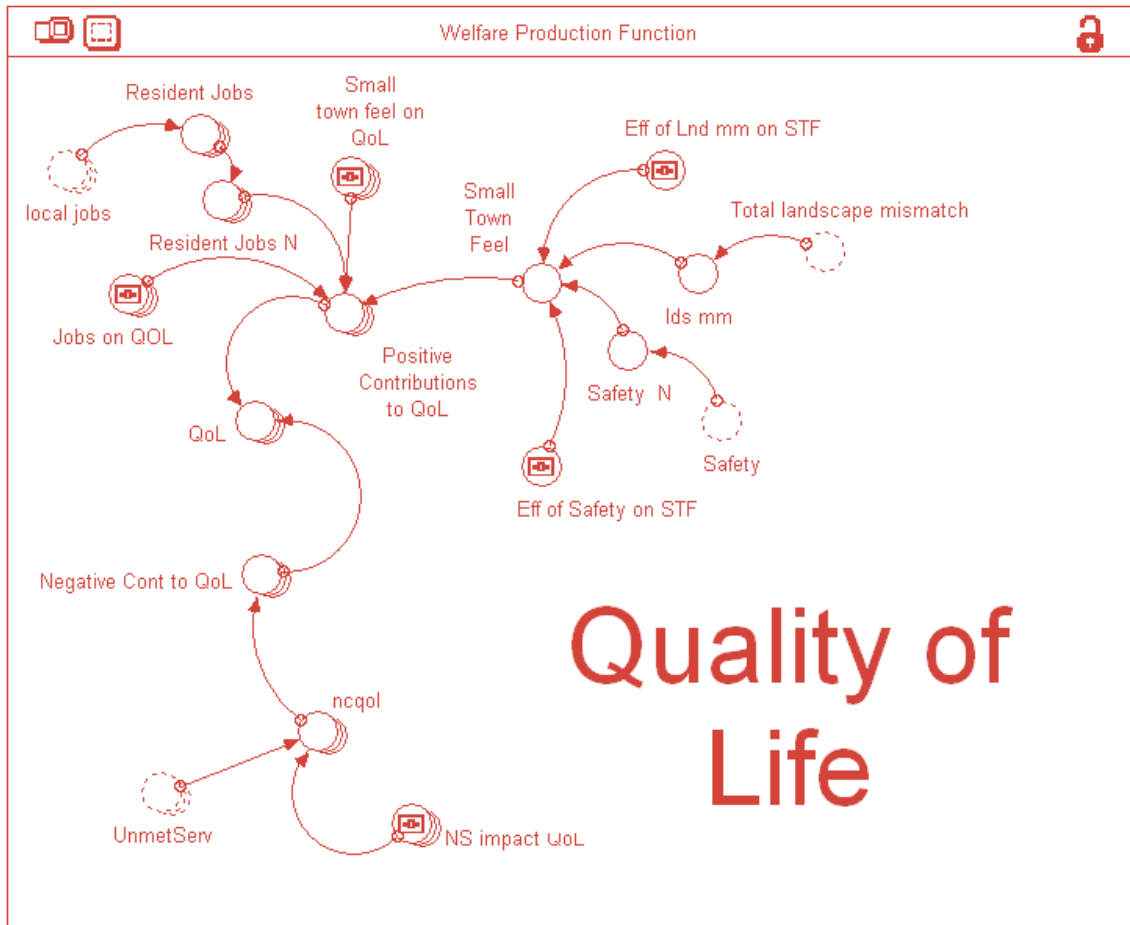
SERVICES



SOCIAL COHESION



QUALITY OF LIFE



THE ARRAYS

There are four arrays in this model. An array is essentially a grouping of variables that enables the model to be simplified. For example, rather than attempting to tie all of the different services provided in your community into the model individually, it is easier to simply say 'Services'. Establishing an array then allows you to define this variable further all within one bubble in the model. Therefore, when you define a variable pertaining to services, you will need to define this multiple times, for as many items as are in the array. This will become clearer as you proceed through defining the variables. For now, I will simply define the arrays.

Residents:

- Tourism Old Locals
- Tourism New Locals
- Tourism Newcomers
- Tourism Retirees
- Tourism Seasonals
- Tourism Absentee Landowners
- Non-Tourism Old Locals
- Non-Tourism New Locals
- Non-Tourism Newcomers
- Non-Tourism Retirees
- Non-Tourism Seasonals
- Non-Tourism Absentee Landowners

Services:

- Social Gatherings
- Public Services
- Natural Amenities
- Summer Recreation
- Winter Recreation
- Spring Recreation

Fall Recreation
Housing
Dining and Lodging

Structures:

Homes
Second Homes
Rentals
Churches
Public Info Centers
Public Education Facilities
Public Infrastructure
Private Sector Businesses

Land Bases:

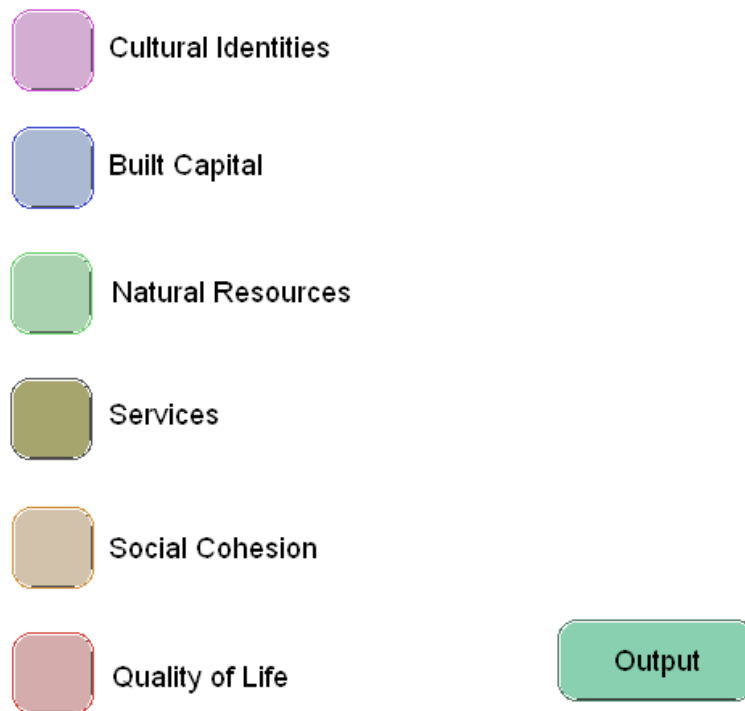
Water
Wetlands
Grassland
Forest
Residential
Urban
Crop Land
Mountains

GETTING STARTED...

Navigation

When you first open the interface of the model, you will come to a Table of Contents. Here, you will find 7 buttons: one for each of the main sectors and one for the output page (see below).

TABLE OF CONTENTS



To proceed to a section, simply click on the button. This will bring you to a main page for each section. Again, you will find a list of sections to choose from with buttons to click on to proceed to each. Each page you come to will have navigational buttons at the bottom. You will be able to select

to go to the next page, the previous page, or back to the main page of the section that you are currently in. For simplicity of navigation through the model, I would suggest that you start at the top of each list and proceed using the 'Next' button to move one page at a time through each section. However, if you wish to go back and change a value for a variable, the navigational system is set up to allow you to move to any section easily.

Defining Variables

As you may notice in the diagrams of the model, many of the bubbles have small icons in the center of them. These represent variables that need to be defined specific to your community, and therefore, these are the variables that you will find in the interface.

Each page that you come to in the interface will have one or multiple variables for you to define. These will be in the form of sliders (figure 1), chained sliders (figure 2) or dials (figure 3).

Figure 1:



Figure 2:

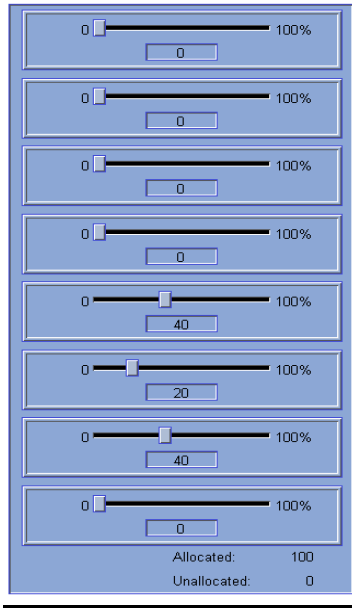
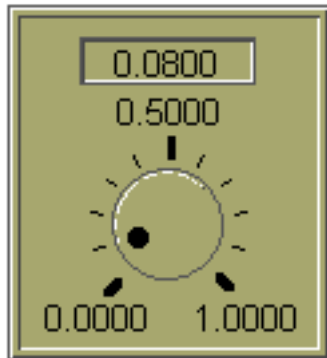


Figure 3:



Sliders

When you see a slider, you will be defining one value. Click and hold the slider knob, and drag it to where you would like to set the value. You will see the value that you are setting directly underneath the slide.

Chained Sliders

When you see a chained slider, you will be defining multiple values that will sum to 100%. Again, click and hold each slider,

and drag it to the value you wish to set it at. If you attempt to put in values that will add to more than 100%, the program will automatically adjust your inputs to not be too high. At the bottom of the chained slider, you will be able to see how much of 100% you have already allocated, and how much you still have left to allocate between your variables. Be sure to check this and confirm that you have allocated all 100%.

Dials

Similar to the sliders, you will be defining just one value on each dial. Click on the dot on the dial, hold it, and rotate it to the value you wish to set.

Default Values

In an effort to make your variable definition move along quickly and smoothly, I have already set values for each variable. As there are many subjective variables, I cannot assume that these are accurate for you community. They should, however, serve as a starting point to give you something to work off of.

After you change the default value and assign your value to a variable, you will notice that a 'U' will appear on the tool (the slider or the dial). If you click on the 'U', this will undo the value you have set and return to the default value.

Let's Begin...

Starting on the next page, I have provided you with a description of all the variables that you will need to define. You may notice that there are a lot of them. To avoid frustration, please do not get too hung up on, or spend too much time on any one variable. The more quickly you move through the initial definition of the variables, the more time you will have to come back to them, discuss them, and see how changing them changes your output or results.

THE VARIABLES

CULTURAL IDENTITIES

Initial Population and Tourism to Non-Tourism Ratio

For the Initial Population, simply put your current population. Later on, when considering different scenarios, you can change this to see the impacts of an increase or decrease in your population size.

For the Tourism to Non-Tourism Ratio, estimate the percentage of people in your community that are financially supported directly through the tourism and recreation industries. This variable is currently set at .75, representing the idea that 75% of your residents are supported through the tourism and recreation industries.

Breakdown of Residents

The Breakdown of Residents variables represent the different groupings or classifications of your residents. While these variables may be extremely difficult to identify specifically, it is more important to consider relative values. For example, consider questions such as: Are there more old locals than new locals?

Notice that there are two sections here: one represents the residents involved in the tourism industry and the other section represents those not in the industry. Each side is a chained slider, and therefore, will need to add up to 100%.

Reluctance to Migrate

How likely is each resident group to move out of town? Reluctance to Migrate will range from 0 to 1, with 1 representing a group that would be very hesitant to move, and 0 representing a group that has no strong ties to the area and would leave without much hesitation. For example, consider questions such as: If the overall appeal to living in your community decreased, would the newcomers be more or less reluctant to leave than the old locals? Again, do not be overly concerned about the

absolute values you input here. Relative values between groups are much more significant.

Quality of Life Breakpoint

If the quality of life in your community is perceived as being high, people will want to move into the area. If the quality of life is perceived as being low, people will want to move out of the area. Quality of Life Breakpoint should be seen as the equilibrium of these two forces. The more positive you make this value, the higher the quality of life would need to be for people to want to move to the area; the more negative you make the value, the worse quality of life would have to get before people would want to leave. This is currently set at 0 for all of the resident groups.

Effect of Relocation Costs

How strongly is each resident group impacted by the cost of relocation or transportation costs? If it became very costly to move, would that impact each group's decision to move or stay?

This variable ranges from 0 to 1, with a value of 0 indicating that relocation costs would not factor into the decision to move, and 1 indicating that the cost of moving is a critical component of the decision. Again, focus on relative values between resident groups as opposed to absolute values.

BUILT CAPITAL

Annual Investment

Annual Investment represents the total amount of money invested in built capital in one year. This would include investments in road maintenance, home developments, new public structure, etc. While this may be extremely difficult to estimate, you will be able to come back to this variable, and see the results if you were to greatly increase or decrease this value.

Built Infrastructure Investment Breakdown

If you consider the total investment amount that you just defined, how will this be broken up between the different structure types? You will be defining percents here, which will need to add up to 100%.

Sources of Built Infrastructure (8 pages)

This variable considers redevelopment. If you were to develop homes from already existing structures, what would be the source? This variable will be covered over 8 pages – one page for each of the 8 structures. The percent values that you input for each source do *not* need to sum up to 100%. The remaining percentage will represent new development and will be allocated later on. For example, if you allocated sources for redeveloping homes adding up to 30%, the remaining 70% will be factored in later as new development.

The defaults set for these variables were defined to indicate that 20% of each structure built is in the form of redevelopment, and that structures are only redeveloped out of the same type of structure.

NATURAL RESOURCES

Preferred Land Distribution

Preferred Land Distribution represents how you would ideally like to see your landscape. What percentage of land would you like to see in cropland? What percentage of land would you like to see as residential? Urban? The percentages that you input here will need to sum to 100%. The values currently set are my best attempt at the actual distribution of the landscape in Grand Isle.

Infrastructure Land Sources (8 pages)

Infrastructure Land Sources are the variables that consider new development. You have already defined redevelopment sources, and now you will define what land bases will be the source of new development. For example, if you are to build new houses, what land will be the source for them?

These variables will be covered over 8 pages – one page for each of the eight structures. Percentages allocated to the different land bases should sum to 100%. However, 0% should be allocated to residential or urban sources – this would be considered redevelopment, and you have already accounted for that.

SERVICES

Money Spent per Service

For Money Spent per Service, consider the cost for one unit of the service. The unit for each service should be thought of as a user day – one person utilizing the service for one day. This will not be overly specific because the services are grouped in a very general manner. For example, the service of Summer Recreation could clearly encompass many different things with varying costs. To keep this as simple as possible, just attempt to define average costs.

Tax per Service

Tax per Service simply considers that tax paid for each service. This is currently set at 8% for each service. If you wish to explore the impacts of an adjustment in tax rates, this would be where you could do that.

Service Provider Percents (9 pages)

Service Provider Percents are the variables that determine who provides each service, and therefore, who receives the money generated by each service. For example, of all of the Summer Recreation provided in your community, which of the residents provide it?

These variables will be defined over 9 pages – one page for each of the 9 services. On each page, there are two sets of sliders, one for tourism residents and one for non-tourism residents, which will each sum to 100%.

Service Needs (12 pages)

Service Needs are the variables that define that demand for services in your community. These needs should be defined in the same units that you considered Money Spent per Service – one person utilizing the service for one day. For example, if an old local would demand 10 social gathering over the course of one year, they would demand $10/365$ per day, or approximately .03. These variables will be defined over 12 pages – one page for each resident group.

Surplus Service Export Potential

Surplus Service Export Potential will allow you to factor in tourism. If you produce a surplus of a certain service (more than your community members demand), would it be demanded by tourists?

These variables will range from 0 to 1, with 0 indicating that the service would not be demanded at all by tourists, and 1 indicating that tourists will demand any and all surplus of a service that your community can provide.

Services Provided (9 pages)

To define the Services Provided, you will need to consider 3 variables and their contributions to each service. The Services Provided will be made up of Landscape by Service, Community Trust by Service and Structure by Service. Landscape, community trust and structures all contribute to the services you are able to provide, and you will need to define the extent to which they do this.

For example, having Public Infrastructure in place may be the primary need that determines your ability to provide Public Services. However, different land bases may determine your ability to provide Natural Amenities.

For the units here, consider the Structures and Land bases each in acres. Consider the Services in user days. For example, 1 acre of a residential land base will provide for the service of housing for how many people per day; or, one acre of housing will provide the service of housing for how many people per day.

Note: the unit for structures is acres, but this is for the structure itself, not including the land it is on. For example, 1000 square feet equals approximately .02 acres, so 1 house with a 1000 square foot footprint would equal .02 acres of houses. Therefore, 1 acre of houses would be equivalent to upwards of 50 houses.

These variables will be defined over 9 pages – one page for each of the 9 services.

Subsidies

Do you wish to provide money or assistance to any particular residents?
These dials would enable you to do that.

Transportation Costs

Transportation Costs here represent the difficulty transporting a service. For example, if you could not get Dining and Lodging in your community, how costly would it be to obtain it elsewhere.

These variables should range from 0 to 1, with 0 indicating that there is no additional cost of receiving the services else where, and 1 indicating that it becomes quite costly to 'import' this service.

SOCIAL COHESION

Initial Trust Levels and Target Trust Levels (2 pages)

Trust obviously has no clearly definable units. Therefore, setting initial values is quite difficult. Important to consider here is the difference between the Initial Levels and your desired, or Target Levels.

These variables will be defined over 2 pages – one page for tourism residents, and one page for non-tourism residents.

Trust Decay Rate and Impacts of Distrust

Trust Decay Rate represents the rate at which trust is lost or broken down in your community. While an absolute value will be extremely difficult to identify here, you will be able to adjust this value and see how different assumptions impact your output. This variable should range from 0 to 1, with 0 indicating the trust is not lost at all, and 1 indicating that trust is completely broken down instantly.

Impacts of Distrust identifies how residents are impacted by a lack of trust in the community. These variables will range from 0 to 1 for each resident group, with 0 indicating that the group is not impacted at all by a lack of trust, and 1 indicating that the group is greatly impacted. Again, relative values are much more important than absolute values here. For example, are old locals more affected or bothered by distrust in the community than newcomers?

Trust Built Through Services Between Groups

Trust Built Through Services Between Groups considers the effect of each service on developing trust between the different resident groups. For example, consider if a service, such as summer recreation, would bring different groups together, encourage communication between groups, and develop community trust.

You will define this variable for each service ranging from 0 to 1, with 0 indicating that the service has no impact on trust, and 1 indicating that the service has a great impact on bringing people together and developing trust.

Trust Built Through Services Within Groups (9 pages)

Similar to Trust Built Through Services Between Groups, Trust Built Through Services Within Groups considers the effects of each service on developing trust, but this time *within* resident groups. For example, would summer recreating bring old locals together? How about fall recreation and new locals?

These variables will be defined over 9 pages – one for each of the 9 services. On each page, you will need to define the value for each resident group. Again, these values will range from 0 to 1, with 0 indicating that the service does not bring the particular group together at all and develop trust, and 1 indicating that a great deal of trust is developed within that group through that service.

Trust and Safety

To consider Trust and Safety, there are two main variables that need to be defined – Bonded Trust and Bridged Trust. Bonded Trust should be considered as the level of trust within resident groups, and Bridged Trust should be considered as the level of trust between different resident groups.

To define Trust and Safety, consider how Bonded Trust and Bridged Trust impact safety. Each variable should be defined between 0 and 1, with 0 indicating that the selected type of trust has no impact on safety, and 1 indicating that it has a significant impact on the level of safety in your community.

Local Economy Target

Local Economy Target represents the desired daily amount of dollars exchanged in goods and services between resident groups in your community.

QUALITY OF LIFE

Small Town Feel (2 pages)

Small Town Feel has two parts. First, you will need to determine the effects of Landscape Mismatch (Landscape Mismatch is the result of the difference between your identified Preferred Land Distribution and the actual landscape) and Safety on Small Town Feel. These are two percents that should sum to 100%. Essentially, you are assigning weights to these two variables in terms of how greatly they impact the Small Town Feel. Neither value here should be set to 0%.

Next (on the next page), you will need to determine how much of an impact Small Town Feel has on your Quality of Life. You will define this between 0 and 1 for each resident group, with 0 indicating that Small Town Feel has no impact on the given resident group's Quality of Life, and 1 indicating that Small Town Feel has a significant impact on the residents' Quality of Life.

Jobs and Quality of Life

Jobs and Quality of Life defines the significance of job security on each resident group's Quality of Life. You will define this between 0 and 1 for each resident group, with 0 indicating that job security and the availability of jobs has no impact on the given resident group's Quality of Life, and 1 indicating that jobs have a significant impact on the residents' Quality of Life.

Services and Quality of Life (9 pages)

Services and Quality of Life defines the significance of services on residents' Quality of Life. This will be defined between 0 and 1 for each resident group for each service, with 0 indicating that a *lack* of the service has no impact on the group's Quality of Life, and 1 indicating that a *lack* of the service has a significant impact. These variables will be defined over 9 pages – one page for each of the 9 services.

OUTPUT

Now that you are to the Output section, it is time to Run the model. To do this, click on Run in the top toolbar. A pull down menu will appear – click Run. You will now be able to see the results of the run of many variables.

For my records, I would appreciate it if you could save the model after each run. To do this, after you click run, please click on File in the top toolbar, click on Save As, and save it to the Desktop as '1'. After your next run, please save it as '2', and so on, numbering each new run.

To view a graph, simply double click on the graph icon above each variable name. To close a graph, simply click on the 'x' in the upper right corner of the page that opens containing the graph. You can view more than one graph at a time, although they may open up overlapping. If this happens, click and hold on the blue bar on top of the graph page, and drag it to where you would like to place it.

Each graph represents a time period of one year (the x axis ranges from 0-365 days). Many of the graphs contain multiple pages. To view these, click on the lower left corner of the graph page to change pages.

All of the variables graphed are described below. However, to best understand them, you may find it helpful to refer back to the diagrams of each section and find the variable. Seeing how the individual variable fits into the larger picture should help to clarify its significance or meaning.

After viewing your initial run, you can now go back to the variables, adjust them to create any scenario that you are interested in, and view the results.

Cultural Identities

Cultural Identities

Cultural Identities is a simple count of the number of people in each resident group. For all output graphs in which a value is being represented based on resident groups, there will be 6 pages. Each page will represent a different resident group (those involved in tourism will be blue, and those not involved in tourism will be red). This graph is a stack of 7 pages – one for each resident group, and a final page representing the total population.

Migration

Migration represents people moving into or out of the community. If the value is negative, this indicates that people are moving out. If the value is positive, this indicates that people are moving in to your community. This graph is a stack of 6 pages – one for each resident group.

Built Capital

Infrastructure

Infrastructure represents the total amount of each structure type that is present in your community. While the numbers here may seem low, this is due to the fact that structures are defined in the units of 'acres'. Again, a house with a 1,000 square foot footprint would be equivalent to .02 acres. This graph is a stack of 8 pages – one for each structure type.

Structures Build

Structures Build represents the amount of each structure that is being built. Again, the unit here is 'acres' so the values will seem quite low. This graph is also a stack of 8 pages – one for each structure type.

Natural Resources

Total Landscape Mismatch

Total Landscape Mismatch represents the difference between your Preferred Land Distribution and your actual land distribution. The units here are essentially meaningless; the trend, direction or change in the variable is more significant.

Landscape

The Landscape variable represents how your landscape is changing, if at all, and the total amount of each land base present. This graph is a stack of 8 pages – one for each land base.

Services

Total Service Money

Total Service Money represents the total amount of money generated through each service. This graph is a stack of 9 pages – one for each service.

Total Unmet Services

Total Unmet Services represents the difference between the demand you defined for your services and the total amount of each service that you can obtain. This, however, does not imply that all of the service demands are being met *in* your community. The total services that you can obtain include those services that you may import or utilize elsewhere. This graph is a stack of 9 pages – one for each service.

Services Provided

Services Provided represents the total amount of services that you are able to produce within your community. This graph is a stack of 9 pages – one for each service.

Total Demand Not Met Locally

Total Demand Not Met Locally represents the difference between the demand you defined for your services and the amount of services that you are able to produce locally. This, however, does not imply that these services are not met, only that they are not met locally. This graph is a stack of 9 pages – one for each service.

Total Local Jobs

Total Local Jobs is a result Total Service Money. A certain amount of revenue can support a certain number of jobs, and this variable represents that calculation. You may have more or less jobs in each service, but these values represent the number of jobs that can be supported by the amount of money generated by each service. This graph is a stack of 9 pages – one for each service.

Social Cohesion

Community Trust

Community Trust represents the level of trust as defined through bridged and bonded social networks. The units of this variable are meaningless and the trends or changes are much more significant.

Safety

Safety, similar to Community Trust, is a result of varying levels of bridged and bonded social networks. Again, the units are meaningless and it is more important to focus on the trends or changes in this variable.

Group Networks

Group Networks represents the level of bonded social capital. This variable is the result of the varying levels of communication within groups. This is a stack of 6 pages – one for each resident group.

Trust Gain

Trust Gain is simply one number representing the level of bridged social capital. This variable is the result of the varying levels of communication between resident groups.

Quality of Life

Quality of Life

Quality of Life represents the coming together of all the main variables defined in the model. This variable will range from -2 to 2 with negative values representing a poor quality of life, and positive values representing a good quality of life. This graph is a stack of 6 pages – one for each resident group.

Positive Contributions to Quality of Life

Positive Contributions to Quality of Life represents all of the variables that add to one's quality of life. This graph is a stack of 6 pages – one for each resident group.

Negative Contributions to Quality of Life

Negative Contributions to Quality of Life represents all of the variables that subtract from one's quality of life. This graph is a stack of 6 pages – one for each resident group.