

# 07 Lab Problem

## Mad River Planning Part Deux

Now that you have experience working with vector data, it's back to the scoring board to identify parcels that fit the VTrans criteria for commuter Park-and-Ride facilities in the Mad River Valley.

As a reminder, here is the [Scoring Form](#)

(<http://vtrans.vermont.gov/sites/aot/files/highway/documents/ltf/2017%20ScoringForm.pdf>) provided by the state program to evaluate the suitability of parcels for development through this program.

This week, we will tackle several more of the criteria from the Scoring Form:

(1) Lot Size - the area and topography of a parcel will limit the size of the parking lot and, consequently, the number of cars that you can park there. You previously worked to identify flat, rolling, and steep areas for Site Development. We have vectorized your layer into a terrain class layer that identifies areas that are flat or rolling (1) versus steep (0). You also have the MR\_Parcels layer from Lab 03. Please refer to the table below to get your lot size scores.

# of parking spaces	Score
0 - 9	0
10 - 20	3
21 - 30	6
> 30	10

(2) Proximity to Main Roads and Public Transit Routes- a good commuter lot parcel is in close proximity (within 30 m) to (A) the main roads that the majority of commuters are coming in on and (B) the public transit routes. Keep in mind that, according to the scoring form, each parcel should receive a separate score for each of these criteria. We have given you a roads layer that contains information regarding the road classification (column AOTCLASS contains numeric classes) and whether or not the road is on the Mad Bus route (column BusRoute contains 'Yes' and 'No'). For the former, you can refer to the table below.

Road Class	AOT #	Score
Class I Town Highway	1	10
Town Highway	2, 3, 4	10
State Highway	30, 35	5
All Others		0

**Your goal for this lab is to give each parcel a "combined score" for the above criteria.**

## Tasks

Just as in Lab 03, you will need to formulate a plan for handling the Lot Size criteria and the Proximity criteria and then create a "combined" final score.

To help you plan, try thinking about the following tasks:

### AREA

- (1) Find flat areas within each parcel and calculate the sizes.
- (2) Aggregate to find the total amount of flat area in each parcel.
- (3) Calculate how many parking spaces can fit in the flat area within each parcel (one space ~ 300 sq ft).
- (4) Score each parcel for Lot Size (see scoring sheet).

### PROXIMITY

- (1) Score each road segment for Public Transit (see scoring sheet).
- (2) Score each road segment for Road Class (see scoring sheet).
- (3) Focus on parcels within 30 meters of road.
- (4) Match road Proximity scores to parcels.

FINAL: Combine Area and Proximity scores.

## Data

You can access the data for o7lab through the course data page ([go/gisisfun \(http://geography.middlebury.edu/GIS/\)](http://geography.middlebury.edu/GIS/)).

## Flow

- (1) Working in small groups (2-3 people), please develop a plan for solving this problem without executing any of the tools in ArcGIS as a means to check your plan as you develop it.
- (2) When you feel good about your plan, talk through it with an instructor.
- (3) Implement your plan one step at a time. Be critical about the output of each step. Does it look like what you were expecting? Try to troubleshoot as you go rather than waiting until the end. Zoom in and check your results.
- (4) When you finish implementing your plan, please show your results to an instructor.

(5) There is no check-up this week. If you have extra time at the end, please use this to re-take the previous check-up or to ask for clarity on any material we have covered so far.