Our Nation’s highway infrastructure is both fundamental and essential to our social and economic prosperity. Ensuring its resilience and sustainability is a core function of our society. A frequent, wide-spread and often serious threat to the functionality of our highways is severe winter weather. A significant portion of the country is affected by snow and ice storms, resulting in significant direct and indirect costs. The typical yearly direct expenditures for municipal snow removal efforts exceed $2 Billion. Indirect costs due to travel delays, inhibition of commerce and business, and costs of property damage and medical expenses due to accidents vary more widely from year to year, but usually reach billions of dollars annually. Improving effectiveness and efficiency of snow removal operations is clearly an opportunity for cost savings and improved usability of highways during the winter months. Over the past several decades graph theory, routing algorithms, and computer technologies have enabled tremendous improvements in the areas of parcel delivery, Internet communications, passenger routing, and trip planning. One category of problems that has been resistant to good solutions to date is the snow plow problem (also referred to as the street sweeper problem). Existing solutions only seek to minimize total travel distance. No solutions currently exist that simultaneously optimize travel distance, unfavorable turns and plowing service priorities/hierarchies. In real-world snow removal operations, it is highly advantageous to clear arterial roads before feeder roads and neighborhood roads. Plow operators also dislike U-turns, as they are inherently time and energy inefficient, and may present safety issues. Another real-world characteristic of the SPR problem is that most municipalities are large enough to require the use of fleets of plows. This introduces the additional need to partition the municipality into a number of individual service areas. This partitioning/allocation process is NOT independent from the routing process the algorithms/methods for dividing up the municipality into service areas are not the same (and may be antagonistic) to the routing methods/heuristics. The need to perform & partitioning for routing multiplies the complexity of the overall problem. And, as any north country resident knows, there are as many distinct duration-intensity precipitation combinations as there are storms in the winter. This suggests the need for varied numbers of plows and routings for every event. So, an ideal snow plow routing strategy should be adaptive, based on immediate weather conditions. This presentation highlights a snowplow routing program that minimizes travel distance while simultaneously prioritizing arterial roads and avoiding U-turns. It dynamically allocates routes to an arbitrary number of plows (i.e. fewer plows for lower intensity snowstorms) and recalculates routes quickly enough to generate new optimum routes for every storm. The data structure is GIS compatible, so results can be ported to a GPS system to guide the plow operators. Use of this software enables snow plow operations to be "just right" - an optimum combination of lowered costs and better service.