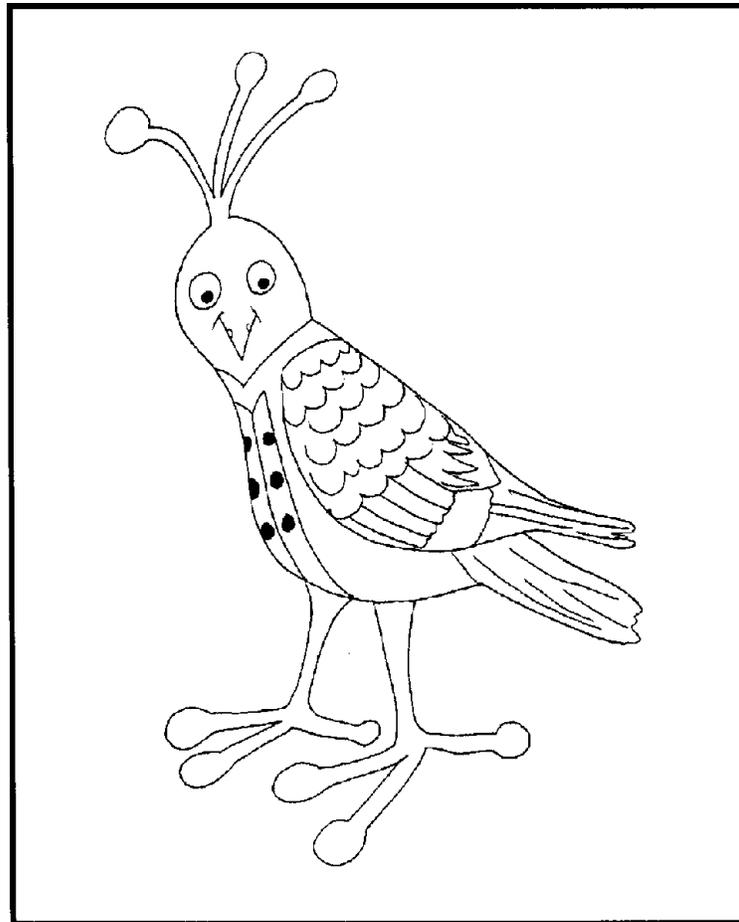


The North American Double-Breasted Meadow Masher

An Endangered Species Role-Playing Activity



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North American Double-Breasted Meadow Masher

Concepts for Students

While always fun, the Meadow Masher can become complex, and the concepts it was designed to teach can get "lost in the shuffle" - especially with Level 1. The following is a guide for teachers and facilitators to the basic concepts they should assist students with understanding, depending on the level run.

Level 1

- *Students must understand what an endangered species is, (a plant or animal in danger of disappearing forever,) and that endangered species are protected by law and cannot be killed.*
- *All species need habitat (food, water, and shelter) to survive, and loss of habitat is the number one cause for a plant or animal to become endangered.*
- *Protecting endangered species is not a simple process - there are often hard decisions to make.*

Level 2

The above plus:

- *There are always several groups involved in an endangered species issue, and they all look at the issue differently.*

Private conservation groups have members who donate money and share the group's philosophy; government organizations have duties required by law; the developer needs contracts and has employees to pay; the town conservation committee protects the town's environment; the planning board controls development of the town.

- *Through cooperation, partnerships, negotiation and compromise, people and an endangered species can almost always co-exist.*

There are options to building the hospital yet not harming the birds, including, among other ideas, renovating existing mills; modifying the design of the hospital; and building it on the other piece of property for sale. ALL of these options present problems the students need to address including possible pollution of the river, disturbance of the birds (sirens etc.), and funding to buy a different site. With a little imagination and cooperation among the different organizations in the exercise, all these problems can be worked out.

Level 3

All of the above plus:

- *Students understand that each group addresses resolving the issue from its own perspective and negotiates with that perspective in mind, role-playing and representing that group's interests.*

The North American Double-Breasted Meadow Masher

Concepts: Managing endangered species, indeed most wildlife resource issues, is complex and demands social skills as well as biological skills. In this activity, students attempt to resolve a problem involving their town's interest in building a badly needed hospital on the site of nesting and feeding grounds of a fictitious federally endangered species called the Meadow Masher.

Objectives: Students will understand that managing wildlife is complicated, especially when dealing with rare plants and animals; that wildlife issues are not "black and white"; and will learn that there are many skills required in wildlife management in addition to a biological education. Managing wildlife requires the ability to manage people. The exercise is designed to be run at one of three levels, and, depending on the level chosen, students will:

1. sharpen communication skills by working in groups to solve a problem;
2. be exposed to or participate in public speaking and making presentations;
3. understand that there are many viewpoints underlying wildlife management decisions and that respect for the viewpoint of others is necessary;
4. understand the functions and interactions of groups that make up local government;
5. understand the interaction between local government, state and federal governmental wildlife agencies, and private conservation groups; and
6. engage in active role-playing

Materials: Blackboard or flip chart to record solutions, overhead projector to project site map on wall (optional), sketch of Meadow Masher, overhead transparency of site map (optional), cut-out of hospital facility, life history of bird, description of situation/problem, description of five organizations, focusing questions for each of the five groups, information about local endangered species, if possible.

Background:

Every living thing needs food, water, and shelter to survive. It also needs to reproduce in order for the species to survive. A plant or animal's favorite habitat fills all these requirements. A wildlife species becomes endangered, (in danger of disappearing forever) when its habitat is destroyed or changed in some way.

As our nation's population and economy have grown, development pressures have altered or destroyed areas of habitat for many of our plants and animals. In 1973, responding to increasing public and scientific awareness, Congress recognized this disturbing trend and passed the federal **Endangered Species Act**. This act, in part, established the federal endangered species list and began requiring federal agencies to take into consideration possible effects of their actions on rare plants and animals. Since the act became law, people cannot harm or kill species that are endangered or "threatened", (those species who are struggling for survival but for whom extinction is less imminent).

The Endangered Species Act requires the U.S. Fish and Wildlife Service to work to recover the plants and animals listed on the endangered species list. In carrying out this assignment, biologists work with state and other federal agencies; public, private and civic organizations; industry; academia; and the media. Consequently, balancing the survival needs of a species with the needs of, say, a growing community requires a number of scientific, communication, and social skills.

Age: grades 5 to 8

Subjects: science, social studies

Skills: communication, negotiation, problem solving (note text for more skills)

Duration: 1 to 1.5 hours

Group size: Ideally, 25 to 30. The limiting factor is the desired number of students in each of the five groups.

Setting: Large classroom, tables and chairs, chalkboard or flip chart, overhead projector

Key Vocabulary: habitat, endangered, threatened, species

The North American Double-Breasted Meadow Masher exercise is modeled after the ongoing recovery work for an actual endangered species, the Karner blue butterfly. Fewer than 100 adults of this butterfly live in an area known as the "pine barrens" adjacent to the airport in Concord, New Hampshire. The larvae of this butterfly will eat only the leaves of wild blue lupine, a wildflower that grows in pine barren habitat.

In the early 1990's, the City of Concord and a developer initiated planning to build a light industrial park in the pine barrens that would provide a badly-needed mail distribution center for Concord's post office plus other business space. What followed was a series of difficult discussions and negotiations between the City, developer, federal, state and private agencies and organizations until an agreement was hammered out in 1993 in which a 27 acre parcel of land was set aside for the butterflies. Concessions were made by everyone to reach this initial agreement. Negotiations between the parties continued until the spring of 1995 when a management agreement was finalized regarding much of the Karner blue's pine barren habitat.

The point is, the Meadow Masher exercise represents real-life scenarios that occur all across the country, all the time.

Preparation and Procedure:

This is a hands-on exercise in which students attempt to balance the needs of a community with the protection of an endangered species. The students are divided into five groups. Each group deals with the proposal of a developer and a town to build a hospital on a parcel of land that is town-owned but also habitat of a fictitious endangered bird, the North American Double-Breasted Meadow Masher. There is another piece of property for sale in the town. **There is no single "right" answer to this exercise.** The exercise can be run at one of three levels.

Review the concepts of endangered species and habitat, if necessary. Tell the students they're going to try to solve a problem involving an endangered species. Go over the background material on the life history of the Meadow Masher and the problem. Show them the site map and locator as you discuss the situation. Then, divide the class into five working groups and tell them each group needs to choose a spokesperson. Give each group a copy of the life history and problem, for reference. Depending on the level of complication desired, proceed with one of the following levels:

Teachers and facilitators should review the "Concepts for Students" handout so they can effectively guide the groups.

Level 1. At this basic level, each group works independently and discusses how their town might be able to build the hospital without harming the Meadow Masher. They do not have any specific identity. The groups can refer to the habitat map as they discuss the issue. (The cut-out of the hospital represents the proportional size of the facility and can be used by the students if they attempt to try different sites for the hospital.) The facilitators circulate and assist the groups, helping them focus on the problem. After a pre-established amount of time, a spokesperson presents his/her group's view to the rest of the class. After all the groups have had their say, the class can vote on the "best" solution.

Level 2. To use this level, students should have been exposed to town government and have a basic understanding about what the town planners and conservation commission do. If necessary, review these roles and also discuss the difference between a state/federal environmental agency and a private conservation group like Audubon. Assign an identity to each of the five groups: the developer (BWC), town planners, local conservation group, federal/state environmental agency, or private conservation group. Provide each group with the appropriate handouts containing their group's function and guiding questions. The groups can refer to the habitat map as they discuss the problem. Facilitators should circulate and help the groups discuss the problem from their particular viewpoint. The groups can interact as they seek solutions. After the pre-established amount of time, the groups' representatives present their positions, and the class selects one as a solution.

Level 3. At this level, students should have a thorough understanding of town government and be familiar with the purpose of environmental agencies and private conservation groups. As in Level 2, assign an identity to each of the five groups and distribute the appropriate handouts. Once again, the groups can refer to the habitat map as they discuss

the problem and can interact as in Level 2. At this level, however, students can be encouraged to assume the roles of their groups and try out their acting skills. Facilitators should circulate to keep the groups focused as necessary. This time a town meeting can be held during which the spokespersons represent their groups' views, speaking as the president or leader of each group. A moderator can be chosen to run the town meeting. The rest of the class, as town citizens, can vote on their favorite solution.

At the end of the exercise, it should be pointed out that these kinds of endangered species problems are continually solved all over the U.S. Possibly, a local threatened or endangered species could be discussed as an example. Even telling the story of the Karner blue butterfly will help the students realize the Meadow Masher mimics real life.

Extensions:

1. Under the Endangered Species Act, plants are protected only on federal land or if federal funding or permits are involved in the project. Explore the same scenario but use a plant instead of a bird. Would there be other possibilities for solutions to the problem? Are there differences in attitude regarding plant vs animal protection?
2. As the habitat of plants and animals is altered or destroyed, does this impact our quality of life and environment? Explore what people need to survive and what elements are necessary for a healthy environment for us.
3. Thoroughly research a local federal or state-listed threatened or endangered species. What, if any, conflicts or problems have developed in the course of recovery work for the species?
4. Invite someone from the environmental protection field to discuss with the class local wildlife management programs.
5. Invite someone from the local construction industry to discuss what measures are taken to lessen impacts on wildlife.

Evaluation:

1. List the four requirements for a species to survive, (food, water, shelter, and reproduction)
2. How does the presence of an endangered species affect a community?
3. Who becomes involved in managing that species and what are their concerns?
4. What skills are necessary to manage wildlife, especially a rare species?

NORTH AMERICAN
DOUBLE-BREASTED MEADOW MASHER

Birdus ridiculous

BACKGROUND INFORMATION

Description and Life History - The North American Double-Breasted Meadow Masher is a medium-sized pigeon-like bird whose black and white feather pattern resembles a formal, double-breasted tuxedo. It is nocturnal (sleep during the day and feed at night) and has large, wide toes that leave distinctive areas of flattened vegetation when it walks in a meadow, hence the "Meadow Masher" name. It has three red plumes on its head.

The Meadow-Masher is a ground nester, creating a nest of twigs and grass, and it returns to the same nest every year. Meadow Mashers tend to nest near streams. The bird eats insects and invertebrates (creatures with no backbones) which it stirs up as it walks in the grass or water. The birds occasionally nest near buildings and can tolerate a small amount of human activity near their nests, although they also need open land to feed. They migrate south for the winter.

The Meadow Masher is a rare species, with only 3 populations remaining in New England. It is an Endangered Species on the U.S. Endangered Species List.

Situation - One population of the Meadow Masher lives in Your Town. About 20 birds, occupying 10 nests, live in a meadow on the outskirts of town. A developer, BWC Corps (Bricks, Wood, and Concrete) and Your Town's officials are discussing building a hospital on 30 acres of the 120 acre meadow where the birds live. A stream flows through the southern section of the site. The town owns the site. There is another suitable site on the other side of town, currently privately owned and for sale. Your Town doesn't have sewage treatment facilities, yet.

Town Planning Board

Planning Board members work on guiding the physical growth of their community so that the town develops in an organized way. They help establish guidelines like the size of house lots and other building codes that affect the physical appearance of the town. They also care about providing services for the town's citizens, like schools and hospitals. People or developers who wish to build in the community would need to have their plans approved by the Planning Board.

As a member of the Planning Board, you try to plan the growth of the town and work at providing services for the citizens.

1. What benefits will your town and its citizens gain if the hospital is built?

2. What would happen if the hospital is not built?

Town Conservation Committee

Members of a Conservation Committee work on preserving the natural environment in their community. In a city, open space and trees might be very important to protect as a place where there's lot's of grass and people can picnic or play softball. In a rural town, there might be areas set aside for wildlife with trails so people can jog or bird-watch.

Your interest is in protecting the natural environment of the community. Your job is to maintain some of the open spaces and wildlife habitat that make your town a nice place to live.

1. Will building this hospital change the natural environment of your town? If so, how?

2. How about the quality of life for your town's people?

Private Conservation Groups

These groups are made up of people who join mainly because of an interest in wildlife and the outdoors. The Audubon Society, for example, is a national organization that cares about birds. It runs educational programs and also assists the federal and state biologists with their work on bird species and habitats. These groups are funded mostly through donations and membership fees.

If you belong to this private conservation group like the Audubon Society, you have a keen interest in your town's environment and protecting fish and wildlife and the places they live. You and the other members help support Audubon's work by donating time and money.

1. What do you think about this project?

2. What do you think Audubon could do to help save the population of Meadow Mashers yet allow the town to build the hospital?

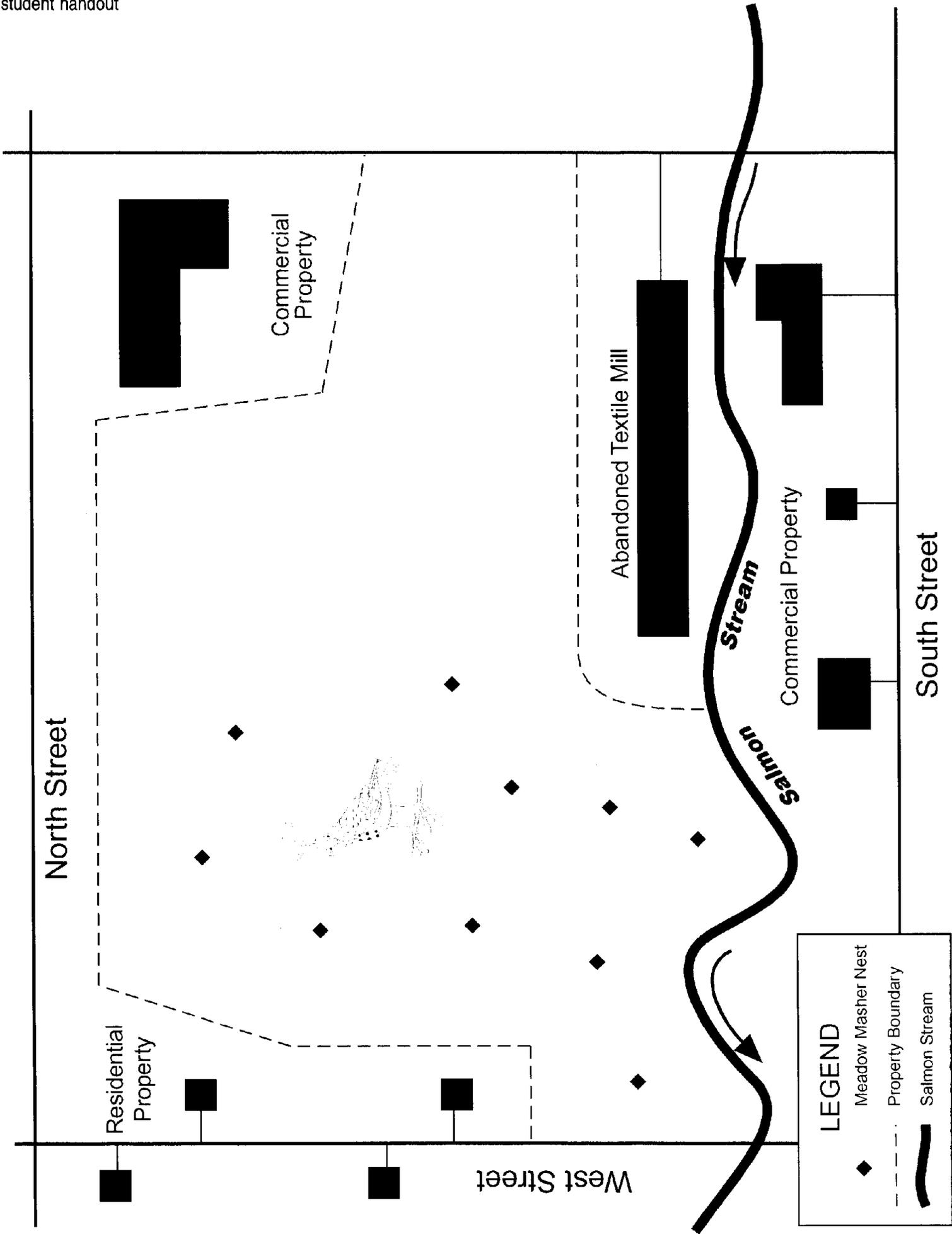
The Developer - BWC Corporation

Developers earn their living building and developing land. Their concerns include construction costs, building schedules, and keeping their crew of workers working. They generally hire local people to help them on projects, and so they are an important source of jobs in the community. In recent years, developers have become increasingly aware of environmental impacts of their work and the laws affecting them. Many have taken steps to minimize the impacts of their projects as much as possible.

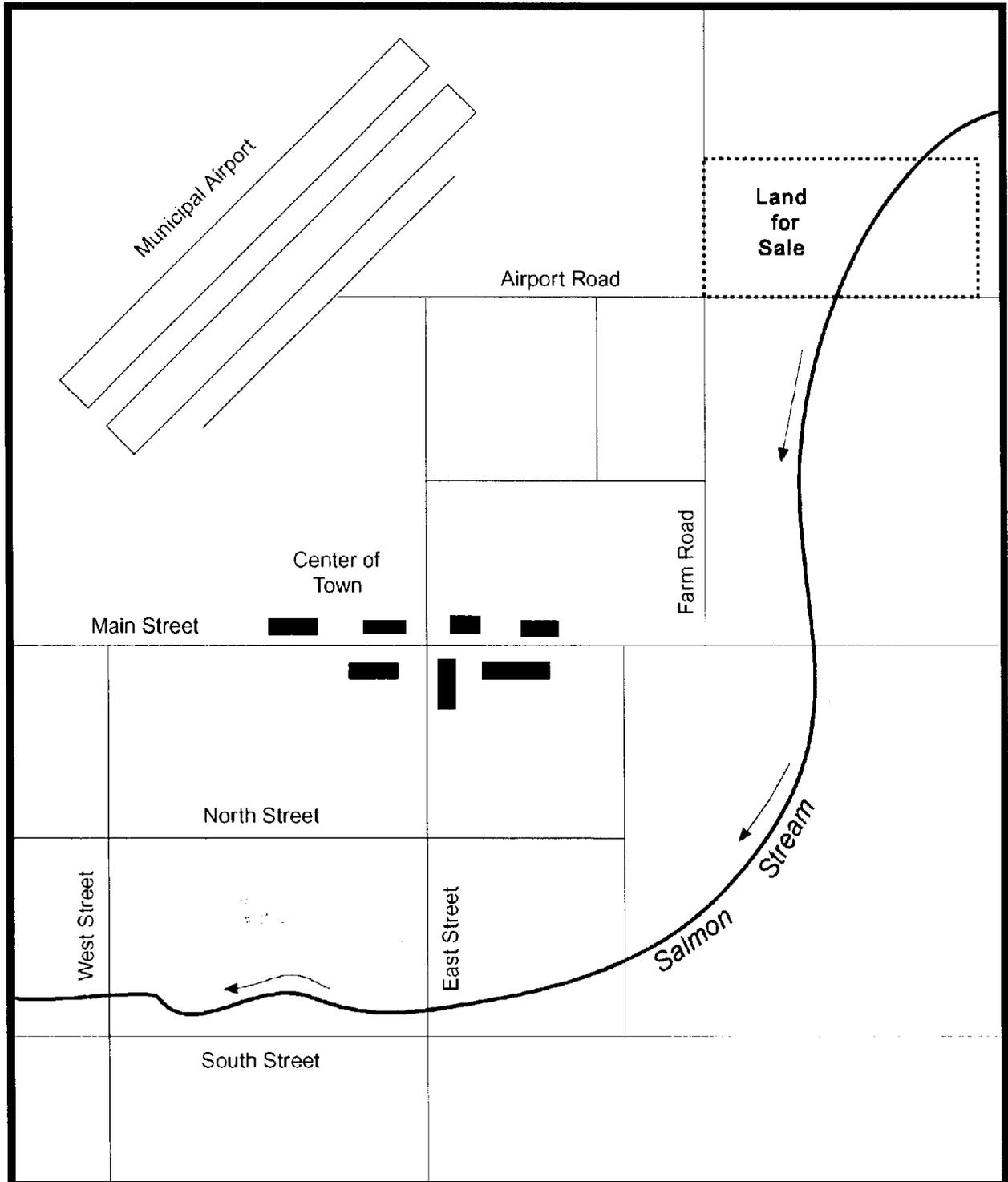
Building is your business. You've provided the town with a bid, and this job is yours if the town gives you the go-ahead. Your construction crew is ready to start building.

1. What do you think about the presence of the Meadow Masher on the site for your project?

2. Are you willing to negotiate or change your plans to get your job done and keep your losses to a minimum? If so, how?



Map showing layout of Your Town, location of Meadow Mashers, and Land for Sale



Hospital cutouts - for student use with Meadow Masher habitat map. Simply cut out and photocopy. (Note: These cutouts fit the scale of the large habitat map)



