**GEAR Practice Exercise**

This practice exercise will help your Core Team gain familiarity with the GEAR online tool. Follow the guided steps to practice exploring data and using that data to answer questions in the Social Resilience Roadmap (Step 5 of the MVP 2.0 process).

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| **Watch the GEAR How-To Video**Check out the “How-To Video” on the [**GEAR Homepage**](https://resilient.mass.gov/GEAR) for additional guidance on how to use the GEAR online tool.  |

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**Let’s start by looking at housing.**

1. On the [**GEAR Homepage**](https://resilient.mass.gov/GEAR), scroll down to where is says “Select Your Factors.” Choose “Housing.”
2. It now shows two options under Climate Hazards (the other options are grayed out). Choose Inland Flooding.
3. Click “Generate Guide.”
4. You are now looking at the Housing x Inland Flooding Guide. Take a moment to read about how inland flooding may impact housing in your community.

**Check out the Housing Map.**

1. Scroll down to where it says “Investigate GEAR Map Data Layers.” Under this section, it will say “Explore the Housing Map to learn more…” Click on the link to the Housing Map.
2. You are now looking at a map with data related to housing. In the upper lefthand corner, use the dropdown box to select your municipality.

**Explore the breakdown of housing types.**

1. On the righthand side of the screen, you will see a list of data layers. Scroll down to where it says “Type of Home.” Turn on this layer by checking the box next to it. Then click the arrow to the left to expand the options.
2. Click on the box next to “Predominant Housing Type - Number of Units.” You will see data appear on the map. If you don’t see anything change on the map, make sure that you turned on the “Type of Home” layer above.
3. The map will show data for census tracts. Municipalities with large populations will be divided into many census tracts. For communities with very small populations, there may be more than one municipality in a given census tract. One by one, click on the census tracts that fall within or overlap with your municipality. For each census tract, a box will pop up that shows the breakdown of housing types by number of units. What percentage of housing is single family (one unit, detached)? What percentage has two units? How about more than two units?
4. Consider noting this information on your Social Resilience Roadmap where it asks: “What types of housing are prevalent in our community?” (And “What types are not?”)
5. You could also turn on the layer “Long Term Care Residences” to help answer this question.
6. Turn off any data layers before moving on to the next step.

**Explore the percentage of households that are renters.**

1. In the list of data layers on the righthand side of the screen, scroll down to where it says “EJ and other priority populations.” Turn on this layer by checking the box next to it. Then click the arrow to the left to expand the options.
2. Click the box next to “Rental Housing Units.” You will see data appear on the map. If you don’t see anything change on the map, make sure that you turned on the “EJ and other priority populations” layer above.
3. Again, the map will show data for census tracts. One by one, click on the census tracts that fall within or overlap with your municipality. What percentage of households are renters?
4. Consider noting this information on your Social Resilience Roadmap where it asks: “What types of housing are prevalent in our community?” (And “What types are not?”)
5. Consider what additional information would be needed to fully answer this question, beyond the data available on this map.
6. Turn off any data layers before moving on to the next step.

**Explore the percentage of renters that are housing cost burdened.**

1. In the list of data layers, scroll to where it says “Housing Demographics.” Turn on this layer by checking the box next to it. Then click the arrow to the left to expand the options.
2. Click on the box next to “Housing Cost Burden (Renters).” You will see data appear on the map. If you don’t see anything change on the map, make sure that you turned on the “Housing Demographics” layer above.
3. Again, the map will show data for census tracts. One by one, click on the census tracts that fall within or overlap with your municipality. What percentage of renters are housing cost burdened? This data identifies households as cost burdened if more than 50% of their income goes towards housing.
4. In the box that pops up, it will also say what proportion of owner households with and without mortgages spend over 50% of their income on housing.
5. Consider noting this information for renters and homeowners on your Social Resilience Roadmap where it asks: “What are the biggest community concerns related to housing?” This could also provide relevant context for the question “Are there people in our community that experience housing insecurity? What does that look like for people in our community?”
6. Consider what additional information would be needed to fully answer these questions, beyond the data available on this map. For a question about community concerns, it will be very important to talk to people in the community.
7. Turn off any data layers before moving on to the next step.

**Explore how housing may be affected by inland flooding.**

1. Zoom in on the map until you can see where buildings are located in your community.
2. In the list of data layers on the righthand side of the screen, scroll to where it says “Type of Home.” Turn on this layer by checking the box next to it. Then click the arrow to the left to expand the options.
3. Click on the box next to “Residential Land Use Only.” This layer may help identify which buildings are housing. You can change the transparency of this layer by clicking on the three dots to the right of the layer name and selecting “increase transparency.”
4. Now we’ll explore where housing might be exposed to flood risk. Turn on the layer “Climate Hazard Data” by checking the box next to it. Then click the arrow to the left to expand the options.
5. Turn on the layer “Historic Flood Hazard Datasets.” Click the arrow to the left to expand the options. Turn on the three flood layers and see which flood zones may overlap with housing in your community. To learn more about each of these flood zones, view the Legend. At the top of the Layers box, you can flip back and forth between the Layers and the Legend. Click where it says “Legend” with an arrow pointing to the right in the top righthand corner. The legend will give you more information about the layers you are seeing on the map.
6. Consider noting this information about flood risk for housing in your Social Resilience Roadmap under the “Prompts for Further Thinking” where it asks, “What may be the specific impacts for our community?”
7. Consider what additional information would be needed to fully answer this question. For example, you may also want to look at “Hot Spots (Land Surface Temperature)” under the Housing x Heat Guide. If you are a coastal community, you may also want to consider the data in one of the Coastal Flooding guides. Also consider what additional information you would need, beyond the data in these maps.