Step 2
Climate Change Adaptation Certification (CACC)
STEP 1: Understand what Climate Change Risk Factors are of potential concern for any proposed project or policy.

ACTIVITY:
1. **Select a project or policy of interest to you.** Something not related to climate change, something you would be making a decision about if climate change was not on your to do list.

2. Complete Step 1 of the CCAC, answering the questions in relation to the project or policy that you have selected, based on what you already know.

3. If you checked any boxes in column 2, check the associated “Yes” box in Column 3 of the same row.

Just complete STEP 1.
STEP 2: Evaluation of Climate Impacts on a Project

1. Continue using the same project you considered yesterday for Step 1.

   Example Project: Redevelopment of riverfront site for mixed use (housing, retail, offices) and public green space.

2. At the bottom of Page 5, identify all of the Climate Change Risk Factors for which you had a “Yes” answer.

   CHECK ALL YOUR “YES” FACTORS

   - PRECIPITATION
   - TEMPERATURE
   - SEA LEVEL RISE
   - VEGETATION CHANGES
   - SLOPE STABILITY
   - OCEAN ACIDIFICATION
   - PEOPLE
   - GREENHOUSE GAS EMISSIONS

   • For each Climate Change Risk Factor that indicated “YES” to climate risk, evaluation of the project is now required.
   • Proceed to STEP 2 and complete each Evaluation marked as Required.
   • If you did not check any “YES” factors, no further CCAC steps are required. STEP 1 documentation becomes permanent record on file.
### CCAC Step 2

3. Carry “Yes” answers over to Page 6.

<table>
<thead>
<tr>
<th>Check your “YES” factors from STEP 1</th>
<th>Climate Change Risk Factor</th>
<th>Complete the Evaluations for Each Checked Factor</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>A</td>
</tr>
<tr>
<td>*</td>
<td>PRECIPITATION</td>
<td>✗</td>
</tr>
<tr>
<td>✗</td>
<td>TEMPERATURE</td>
<td>✗</td>
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<td>✗</td>
<td>SEA LEVEL RISE</td>
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<td>VEGETATION CHANGES</td>
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<td>✗</td>
<td>PEOPLE</td>
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<tr>
<td>✗</td>
<td>GREENHOUSE GAS EMISSIONS</td>
<td></td>
</tr>
</tbody>
</table>

4. Complete the Indicated Evaluation Questions

If you had a yes for **Precipitation**, complete evaluations A, C, D, E, G & H.
If you had a yes for **Precipitation & Temperature**, complete A, C, D, E, F, G & H.
And so forth.
Homework

Evaluate project susceptibility to flooding and determine impact.

1. Map the project area (inclusive of its access corridors, key utility infrastructure, and associated multimodal transportation infrastructure) in relation to flood zones and frequently flooded areas (both episodic and chronic) using:
   - Local flood zone data;
   - Local wetland data;
   - Project site assessment data;
   - Regional flood zone data;
   - Regional flood mapping tools:
     - Use FEMAs Flood Map Service Center (MSC) portal (https://msc.fema.gov/portal/search) by entering the project address and reviewing maps it produces to identify any potential flooding impacts. MSC is the official public source for flood hazard information produced in support of the National Flood Insurance Program.
     - The NOAA Coastal Flood Exposure Mapper online visualization tool (https://coast.noaa.gov/floodexposure/#/map) supports communities that are assessing their coastal hazard risks and vulnerabilities by creating a collection of user-defined maps that show the people, places, and natural resources exposed to coastal flooding. The tool is currently unavailable for the west coast (see https://coast.noaa.gov/digitalcoast/tools/flood-exposure.html for more information). Use if available to the project area.

2. Provide a narrative review explaining the projects’ overlap with mapped flood areas. Also, document that you have contacted City or County engineering and public works’ staff and incorporate their knowledge of whether the project area is affected by nuisance, localized or chronic flooding that is generally known to occur, though not necessarily mapped.

RESULT:
- Project unaffected by flooding or flood zones.
- Assessment indicates climate change risk to project that cannot be avoided.
- Assessment indicates climate change risk to the project, but risk could be minimized by (explain here or in attachment):

Each question will:
- Direct you to data if it is available
- Ask you an analysis question
- Ask you to make a determination
STEP 2: Evaluation of Climate Impact on a Project

PROJECT: Riverfront redevelopment for mixed use buildings & public green space.

EVALUATION QUESTIONS:

1. Map project area in relation to flood zones and frequently flooded areas. Use local or regional flood zone data, NOAA Coastal Flood Exposure Mapper, or the FEMA Flood Map Services Center.

Map shows flood risk to site

It is important to document and show your work as you develop the answer to each question. This allows for traceability and review.
STEP 2: Evaluation of Climate Impact on a Project

PROJECT: Riverfront redevelopment for mixed use buildings & public green space.

EVALUATION QUESTIONS:

1. Evaluate project susceptibility to flooding and determine impact.

2. Provide a narrative review explaining overlap and document whether project area is affected by nuisance, localized, or chronic flooding that is known to occur, though not necessarily mapped.

The flood map shows this site is vulnerable to what has historically been a 100 year flood.
EVALUATION QUESTIONS:

Evaluate project susceptibility to flooding and determine impact.

1. Map project area in relation to flood zones. FEMA map presented.

2. Provide a narrative review.
   The flood map shows this site is vulnerable to what has historically been a 100 year flood.

3. Document RESULT:
   - Project unaffected by flooding or flood zones.
   - Assessment indicates climate change risk to project that cannot be avoided.
   - Assessment indicates climate change risk to the project, but risk could be minimized by:
     Development needed in location, redesign to have permeable first floor, protected utilities & some elevated access (pedestrian, bike or automotive). Design open space with living shoreline

Select a result based on the analysis of the evaluation question. Providing your ideas for minimizing impact or risk from climate change can help in creating a path forward at the determination in STEP 3.
STEP 2: Evaluation of Climate Impact on a Project

PROJECT: Riverfront redevelopment for mixed use buildings & public green space.

EVALUATION QUESTIONS:

Evaluate project vulnerability to landslides and other geologic hazards.

1. Map your project and its access corridors using local Geological Hazardous Areas Maps.
   
   County hazard maps unavailable; see historic landslides map

2. Provide a narrative review of your project in relation to slope stability.
   
   Site is relatively flat and along river bank, not historic evidence of slope instability or significant erosion in area.

3. Document RESULT

   Project unaffected by landslides and other geologic hazards.
Project success relies on transportation for those who live, work and frolic at the site. Initial design intersects with surface streets and local public transit routes but not with bike or pedestrian paths.

**RESULT:**
- Project will facilitate multimodal transportation.
- Assessment indicates no accommodation of multimodal transit.
- Assessment indicates that multimodal transit could be accommodated by:

Project could be designed to better integrate multi-modal transportation, including better design (elevated and/or drained) to ameliorate the effects of flooding on transportation and accessibility.
If population increases, demand for open space for recreation may increase. If population decreases, this development may be underutilized or use patterns could adjust to use more space per capita.

**RESULT:**
- Project unaffected by population.
- Assessment indicates climate change risk to project that cannot be avoided.
- Assessment indicates climate change risk to the project, but risk could be minimized by (explain here or in attachment):
  
  Design to accommodate more open space users (better transit and path connections), as well as fewer tenants (design to support alternative uses for structures)
If this were being used as a formal evaluation tool, you would proceed to Step 3 to make a determination.

In Step 3 project proponent and the “review authority” both provide an assessment based on Step 2 findings. From those a determination is made.

Possible determination options include:
- Project Approved as Proposed
- Project Denied
- Project Redesigned to Reduce Risk and Approved
- Project Relocated/Sited in Alternative Location and Approved
- Project Approved with Condition (e.g., Bond, Fee)
- Project Approved with Informed Consent Regarding Risk
Optional Assignment

Give Steps 2 & 3 of the Climate Change Adaptation Certification a try.

Deadlines:
1) Monday by 3pm ET please send Lara (Lara@EcoAdapt.org):
   • a one sentence description of the project you used,
   • a copy of your completed CCAC or an email with
     • Which climate risk factors you had a “YES” for in Step 1,
     • Your Evaluation Question (A-J) answers from Step 2
     • Your determination analysis (Step 3)

Don’t get hung up if it asks you for something you don’t have. Simply do the best you can, make an educated guess and move on.