

## Module 1: Introduction to Cumulative Effects

Time Start	Time Stop	Onscreen Visual Description	Voiceover
0:00	0:02	The Highway 413 project logo is on screen. Acoustic upbeat music plays in the background. A friendly, male voice narrates throughout the video.	-
0:03	0:08	The logo fades to a video of a highway with a truck driving on it. Text appears on screen that says, "This e-learning module provides an overview of the Highway 413 Project and introduces Cumulative Effects."	This e-learning module provides an overview of the Highway 413 Project and introduces Cumulative Effects.
0:08	0:21	A different video of a busy highway fades in and plays on the left-hand side of the screen. On the right, the text says, "Proposed 52-kilometre highway and transitway." Below this, it reads,"	Highway 413 is a proposed 52-kilometre highway and transitway that will extend from Highway 400 in the east to the Highway 401/407 Express Toll Route interchange area in the west.
0:21	0:26	Graphic changes to an icon of a highway with a car driving along the bottom. Text on the right hand corner of the screen reads, "4 and 3 kilometres extensions to 410 and 427."	The project will include 4 and 3 kilometre extensions to 410 and 427 respectively,
0:27	0:30	A graphic map of the Peel, York, Toronto area is displayed. Text on the side of the screen reads, "Connecting the regions of York, Peel and Halton."	and will connect the regions of York, Peel and Halton.
0:30	0:32	The screen fades to white, and in the centre appears the Highway 413 logo with the text, "Stage 2 Individual Environmental Assessment process."	Stage two of the Environmental Assessment process includes

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0:33	0:39	The screen transitions to a checklist in the background with icons for identifying the route, determining interchange locations, and completing the preliminary design for the new corridor appearing as the text is mentioned.	identifying the route, determining interchange locations, and completing the preliminary design for the new corridor.
0:42	0:44	The screen transitions to an icon of a stylized highway with the text, “A Cumulative Effects Assessment will be completed” below.	As part of the provincial Environmental Assessment for the Project, a Cumulative Effects Assessment will be completed.
0:45	0:57	The screen transitions to video footage of a business person typing at a laptop. The words, “Key Terms” appears in a black box at the top left. Below is the text, “Cumulative Effects are changes to the environment and social and community features caused by the combined effects of past, present and future activities and processes.”	Let’s start by defining some key terms. Cumulative Effects are changes to the environment and social and community features caused by the combined effects of past, present and future activities and processes.
0:58	1:05	The screen transitions to a split screen background with the left side featuring a field of plants, and the right-side features birds eating. On top of the split images are icons representing the disciplines being studies.	It is important to note that there will be many different environmental studies for the Highway 413 project, and their results will provide input for the Cumulative Effects Assessment.
1:06	1:16	The screen transitions to an aerial video of a forest with the text, “Residual environmental effects” highlighted in a black box. Underneath are the words, “A residual environmental effect is one that remains, or is predicted to remain, even after mitigation measures have been implemented.”	The next term we need to understand is residual environmental effects. A residual environmental effect is one that remains, or is predicted to remain, even after mitigation measures have been implemented.

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1:17	1:26	The screen turns to white and icons for a city, a highway, a cloud of pollution and a clip board appear.	An example of this could be a highway constructed near a community where there may still be air quality pollutants, even after mitigative measures have been put in place.
1:27	1:37	The screen transitions into a string map in the background with the text, “Cumulative Effects Assessment” highlighted in a black box. Underneath are the words, “This type of assessment looks at a project’s potential residual environmental effects, while also considering the effects of activities outside of the project.”	Now it’s time to define a Cumulative Effects Assessment. This type of assessment looks at a project’s potential residual environmental effects, while also considering the effects of activities outside of the project.
1:38	1:42	The screen transitions to various people working in a coffee shop setting. The text on top reads, “By combining and analyzing these two types of effects, we can have a greater understanding of a project’s impact.”	By combining and analyzing these two types of effects, we can have a greater understanding of a project’s impact.
1:43	1:49	The screen transitions to feature a map of the Toronto / Kitchener area, with overlaying text reading, “The combined effects may change and affect the broader community or region, beyond the location of the project.”	It’s important to keep in mind that these combined effects may change and affect the broader community or region, beyond the location of the project.

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1:50	2:01	<p>The background transitions to clouds floating peacefully while the text is updated to read, “A Cumulative Effects Assessment takes into account historical and future timelines, looking at project and non-project-related activities that have happened either in the past or are expected to happen in the future.”</p> <p>As the voice continues narrating, the background changes from the clouds to a stack of books”.</p>	<p>Additionally, a Cumulative Effects Assessment takes into account historical and future timelines, looking at project and non-project-related activities that have happened either in the past or are expected to happen in the future.</p>
2:02	2:18	<p>The image fades and the screen is split with text on the left reading, “The Assessment examines the interaction between the project’s potential residual environmental effects combined with the effects from other activities on environmental features that are valued by the stakeholders, Indigenous communities, and the public.” The right shows an illustration of a tablet, scroll, phone and multiple-choice survey question, with a magnifying glass floating on top.</p>	<p>Finally, the Assessment examines the interaction between the project’s potential residual environmental effects combined with the effects from other activities on environmental features that are valued by the stakeholders, Indigenous communities, and the public – like parks, animals or important cultural sites.</p>
2:19	2:21	<p>The illustration fades and is replaced with an aerial view of a forest with the words, “These are known as Valued Components” overlaying it.</p>	<p>These are known as Valued Components.</p>

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Time Start	Time Stop	Onscreen Visual Description	Voiceover
2:21	2:25	Text changes to read, "Valued Components are features that were predicted to have residual environmental effects."	Valued Components are features that were determined to have residual environmental effects,
2:26	2:31	The screen transition to show a group of people working together in an office in the background. Overlaid are three icons representing stakeholders, Indigenous communities, and the public.	and, as mentioned earlier, are important to our stakeholders, Indigenous communities, and the public.
2:32	2:39	The background fades into two scenes - a graph on top and a fast growing plant on the bottom. On top of these visuals are the words, "Scientific worth, ecological and economic impact, or historical value."	They could be important for a number of reasons, like possessing scientific worth, ecological and economic impact, or historical value.
2:40	2:49	The imagery transitions to aerial footage of a forest and then a group of bats flying, with the words, "Valued Components could be as widespread as greenhouse gases or as specific as a local bat species' roosting area."	They could be as widespread as greenhouse gases or as specific as a local bat species' roosting area. Valued components can and do vary from project to project.
2:50	2:53	The screen transitions to an image of question marks lying on a table, and an icon of a person's head facing left along the right hand side. Overlaid are the words, "So, why is it important to understand Cumulative Effects?"	So, why is it important to understand Cumulative Effects?

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<b>2:54</b>	<b>3:06</b>	The screen transitions to a video of a person's hand opened facing upwards with text on top that says, "Know the difference... Cumulative Effects Assessments are Valued Components oriented, whereas typical Environmental Assessments are project oriented."	Cumulative Effects are described in a similar way to other project impacts, but they differ in one fundamental way: Cumulative Effects Assessments are Valued Components oriented, whereas typical Environmental Assessments are project oriented.
<b>3:07</b>	<b>3:12</b>	The screen transitions to icons of a magnifying glass examining a check list on one side, and a highway icon on the other. Underneath the highway icon is text saying, "All components potentially affected by a project."	In other words, the point of view is shifted from looking at all components potentially affected by a project,
<b>3:15</b>	<b>3:15</b>	The icons disappear and are replaced with an image of a humming bird, and icons symbolizing construction, a city, buildings and a highway. Text on the screen reads, "All the projects that may affect a component."	To all the projects that may affect a component.
<b>3:16</b>	<b>3:19</b>	The screen transitions to an image of a person walking through the forest with text below stating, "Did you know? Impact assessments tend to focus on the physical "footprint" of a project."	Impact assessments tend to focus on the physical "footprint" of a project.
<b>3:20</b>	<b>3:24</b>	The footage fades and is replaced with a circular light with arrows pointing in all directions away from the centre, which then transitions into an icon of a location marker.	A Cumulative Effects Assessment enlarges the scale of an assessment to a regional level.

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3:25	3:37	The screen transitions to aerial footage of a forested area, and then a highway with overlaying text reading, "In all other ways, a Cumulative Effects Assessment is similar to Environmental Assessments and impact assessments."	In all other ways, a Cumulative Effects Assessment is similar to Environmental Assessments and impact assessments and, therefore, often relies on established Environmental Assessments and impact assessment practices.
3:38	3:45	The screen fades and in its place is an icon to the left with a location marker and magnifying text, and accompanying text reading, "Cumulative Effects Assessment: Looks at potential residual environmental effects locally and beyond the location of the project."	To recap, a Cumulative Effects Assessment: Looks at potential residual environmental effects locally and beyond the location of the project;
3:46	3:53	The text and icon are replaced; the icon is now an hour glass with a clock in the corner. Text to the right of the icon reads, "Cumulative Effects Assessment: Examines the interaction between the project's potential residual environmental effects as well as the effects from other relevant projects in the past or expected in the future."	Examines the interaction between the project's potential residual environmental effects as well as the effects from other relevant projects in the past or expected in the future;
3:54	4:01	The text and icon are replaced. The icon is now three circles; one has a person in the centre, one has a dollar sign and one shows a floral shape with the text reading, "Cumulative Effects Assessment: Analyzes the identified effects on features called Valued Components, which are important to stakeholders, Indigenous communities, and the public."	Analyzes the identified effects on features called Valued Components, which are important to stakeholders, Indigenous communities, and the public.

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Time Start	Time Stop	Onscreen Visual Description	Voiceover
4:02	4:06	The screen transitions to an icon of a map. Overlaid is the text, “Spatial / Temporal boundaries”	The last few terms we need to understand are spatial and temporal boundaries.
4:07	4:15	The screen fades, and the map of Peel, York, Halton and Toronto returns in the background, with text reading, “Spatial boundary: A Spatial boundary is based primarily on the Zone of Influence, which is the area around the Project site that may be affected by the proposed changes within the site, for the Valued Component.”	A Spatial boundary is based primarily on the Zone of Influence, which is the area around the Project site that may be affected by the proposed changes within the site, for the Valued Component.
4:16	4:23	The map fades to text reading, “A spatial boundary can also be defined as areas where significant residual environmental effects can reasonably be expected.” There is a squiggly loop icon to the right, denoting a boundary.	A spatial boundary can also be defined as areas where significant residual environmental effects can reasonably be expected.
4:24	4:39	The screen transitions to footage of a gravelly area being dug up, with overlaying text reading, “For identified archaeological features for the Highway 413 project, the Ontario Heritage Act and supporting provincial guidelines are consulted to determine registered archaeological resources and to set buffers or spatial boundaries for assessing areas of archaeological potential.” Next to the text is an icon of a book and a check mark to the left.	For example, for identified archaeological features for the Highway 413 project, the Ontario Heritage Act and supporting provincial guidelines are consulted to determine registered archaeological resources, and to set buffers or spatial boundaries for assessing areas of archaeological potential.



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Time Start	Time Stop	Onscreen Visual Description	Voiceover
4:40	4:48	The video footage fades and is replaced with a clock, and text that reads, "When does a Cumulative Effects Assessment usually take place"	Now that we understand some of the key terms associated with Cumulative Effects Assessments, when does a Cumulative Effects Assessment usually take place?
4:49	4:52	The screen transitions to footage of three people working in an office setting, reviewing documents.	-
4:53	4:58	The footage fades and an illustration of a computer floats into the screen, with an icon of a folder and a document.	The Ontario Ministry of Transportation has developed a draft Cumulative Effects Assessment Framework to carry forward through the provincial environmental assessment.
4:59	5:01	The image fades and an illustration of two groups of trees with a report featuring some graphs appears in the middle.	This Framework will act as the work plan for the Cumulative Effects Assessment.
5:02	5:12	The illustration fades and is replaced with text that reads, "Once the Cumulative Effects Assessment Framework is finalized and the preliminary studies to assess the impacts of the project are completed, we will determine if the project has residual environmental effects." There is video footage of a woman working in the background.	Once the Cumulative Effects Assessment Framework is finalized and the preliminary studies to assess the preliminary impacts of the project are completed, we will determine if the project has residual environmental effects.

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5:13	5:16	The footage fades and is replaced with an illustration of a roadway along the bottom, and text that reads, "If this is the case, the Cumulative Effects Assessment will proceed."	If this is the case, the Cumulative Effects Assessment will proceed.
5:17	5:23	The screen transitions to an illustration of a laptop with a bulleted list. Overlaid is text that reads, "We've covered a lot!"	We covered a lot in this module; from key terms, to a more in-depth look at when and why a Cumulative Effects Assessment takes place.
5:24	5:29	The screen fades to an icon of a checklist.	It's important that you have an opportunity to learn about the Cumulative Effects Assessment Framework.
5:30	5:35	The screen fades and is replaced with footage of people working in a boardroom, overlaid with text that reads, "The Cumulative Effects Assessment Framework outlines a consultation and engagement program."	The Cumulative Effects Assessment Framework outlines a consultation and engagement program,
5:36	5:40	The screen transitions to a close up of a check list.	which includes receiving feedback on the list of valued components to be carried forward.
5:41	5:44	The screen transitions to an icon of a monitor with a form.	You can find the framework on this webpage.
5:45	5:52	The icon fades and is replaced with footage of a person working at a computer. The footage is overlaid with an icon of a scroll with a magnifying glass.	You can learn more about Cumulative Effects and the Cumulative Effects Framework by reading our Cumulative Effects fact sheet, found at the bottom of this webpage.

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5:53	5:58	The screen transitions to a rendering of a desk with a computer. The computer is displaying a web page with the Cumulative Effects online feedback form.	If you have any other questions, you can reach out through our online feedback form, on the “Contact Us” tab on our website.
5:59	6:04	The info fades and is replaced with a green and white screen with the text, “Up next: In the next module, we’ll examine the Highway 413 proposed five-step Cumulative Effects Assessment Framework.”	In the next module, we’ll examine the Highway 413 proposed five-step Cumulative Effects Assessment Framework.
6:05	6:08	The text fades and is replaced with the words, “Thanks for watching, and we’ll see you next time.”	Thanks for watching, and we’ll see you next time.
6:09	6:12	The full screen fades to white and the Highway 413 logo appears.	-