

Students were assigned innovator roles in their groups. Each innovator was assigned science and geography inquiry topics and guiding questions. The science topics are first and then second topic relates to geography.

Innovator 1

Biodiversity and ecological Protection

- What types of species at risk are there?
- What food webs exist? What are some of the indicator species?
- Are plans in place that provide ecological protection for creeks, swamps, nesting sites and groves of trees, on the site?
- Do the plans propose conservation covenants or other protective measures for ecologically sensitive areas?

Local Economic Opportunities

- What are the various industries that provide employment in these communities?
- Do the plans include a practical strategy for local economic development?
- Are local economic plans in sync with land use and transportation planning?
- Do they include zoning for live-work units?
- Do they encourage shared resource use between facilities?
- What is the population structure of this location? (Population Pyramid)

Innovator 2

Natural Resource use-Water

- What resources are important to your area?
- Are we conserving water on the site? Is it being recycled?
- Is water able to return into the ground without flooding concerns?
- Is the watershed healthy?

Sustainable Transportation

- Is the development served by public transit? Does it need public transportation?
- Does it have traffic calming at pedestrian crossing & neighbourhood centres?
- Does it have pedestrian trails and cut-throughs, to encourage walking?
- Does it have bike lanes on the busier roads?
- How else may community members travel around?
- Is there a way to integrate sustainable materials when building new roads/pathways/etc.?

Innovator 3

Energy

- Do the plans encourage or require passive or active solar design?
- Do they require a minimum level of energy efficiency?

- Do they include district heating & cooling or a ground source heat system?
- What are the main type of energy sources that you are using in this location?

Urban Design

- Does it have village centres/town squares as gathering places?
- Are homes clustered together to increase residential density?
- Are green spaces and parks easily accessible to citizens?
- Is there a close by commercial centre within walking distance of homes?
- How are the population dynamics (population structure) included in the urban design?

Innovator 4

Agricultural Practices

- What type of farming practices are in place?
- How much land is allocated for farming?
- Types of agriculture that is grown and why?
- How are pests maintained?

Livable Communities

- Are there community allotment gardens?
- Is there a gathering place for the community? (i.e. community hall or recreation centre)
- Do they include space for a church, or place of worship?
- Do they include the necessary schools, seniors centre or facilities for teens?
- Do the designs and construction include the arts?
- How are the liveability and population of this community interconnected?

Innovator 5

Waste Management: The 3R's

- Are recycled materials used in building your community?
- Is there a reduction in the amount of resources and materials needed based on urban planning?
- Is there a way to reuse important materials in a sustainable design?
- What type of waste systems are being used?
- How is sewage treated?
- How is garbage disposed of?

Climate adaptations

- How are buildings designed to adapt to the area's climate?
- Is there a plan to adapt to climate change for this location?
- Is there a way for the community to prepare for extreme weather events?
- How might this community be impacted by climate change?
- What is/can the community do to mitigate climate change? (Be specific.)