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The Regional Municipality of Durham Information Report

From: Commissioner of Planning and Economic Development
Report: #2024-INFO-75
Date: November 22, 2024

Subject:

Precision Agriculture Field Day

Recommendation:

Receive for information.

Report:

1. Purpose

1.1 The purpose of this report is to provide an overview of the Precision Agriculture Field Day held on May 28, 2024.

2. Background

2.1 Durham Region is home to 3,360 local agri-food businesses, including 1,200 farms. Approximately 27,105 people are employed by Durham's local agri-food value chain, yet labour shortages continue to limit our agri-food growth capacity.

2.2 The second annual Precision Agriculture Field Day was hosted by the Region of Durham's Economic Development and Tourism Division (Invest Durham) in partnership with Durham Farm Connections (DFC) and was sponsored by the Durham Workforce Authority (DWA).

2.3 The event invited 100 high school students studying environmental science, information-communication-technology, green industries, civics, and more, to a Durham Region farm to learn about how technology is used on farms, how farming

technology and the environment integrate on the farm, and about the career opportunities in agriculture related to their respective areas of study.

3. Previous Reports and Decisions

3.1 [#2022-EDT-10](#) – Growing Agri-Food Durham – A Five-Year Plan to Grow the Agri-Food Industry. This event directly supports the following actions in the [plan](#):

- a. Goal 6: Identify opportunities and solutions for the workforce and labour shortages in the agri-food industry.

Action (a): Educate youth in the region about diverse career opportunities available in agriculture through videos, presentations, resource sharing and agricultural programming.

- b. Goal 8: Partner with organizations and agricultural organizations to deliver and expand agricultural literacy in the Region.

Action (d): Have an active role in educating non-farm communities about agriculture in partnership with DFC.

4. Precision Agriculture Field Day Event Details

4.1 DFC was a key partner in the delivery of this event. DFC provides agriculture education opportunities for the farm and non-farm communities in Durham Region to ensure the viability of the agri-food sector. The event was sponsored by Durham Workforce Authority.

4.2 Prior to the event, five videos were circulated to the teachers and students as pre-materials to help students learn about the agri-technology and precision agriculture techniques they would be seeing at the field day. Four videos, sponsored by the East Central Soil and Crop Improvement Association, were created prior to the 2023 Precision Agriculture Field Day event, and one new video was created prior to this year's event to showcase soybean harvest. All the videos can be used as a future educational resource and are available for public viewing on the [Durham Farm Connections - YouTube](#) channel.

4.3 There were four stations/demonstrations at the event, each led by agriculture industry professionals and leaders in agri-technology:

- a. No-till soybean planting and soil health. The students learned about the technology and mechanics of the tractor and soybean planter, including GPS mapping, auto-steer, planter sensors, fertilizer placement, and input/resource efficiencies. Students learned how the soil and agriculture work hand in hand, including how agricultural practices improve the function of soil micro-organisms, as well as improving overall soil structure. Students watched how equipment and technology is used to monitor and track soil health. This demonstration was provided by the Barrie Family and Felix Weber from Ag Business and Crop.
 - b. Precision fertilizer and spray application, and GPS simulator: Students watched a self-propelled nutrient and spray applicator machine pass over the growing corn crop. Discussion included the computer programming, soil/crop analysis and environmental considerations that are made for each nutrient that is applied on a crop. The interactive GPS simulator allowed the students to experience first-hand what it's like to operate a GPS guided machine. This demonstration was provided by Ed Hanson from Equipment Ontario and Dave Cooper from Kubota Canada.
 - c. Drone flight demonstration: Students watched how drones can be applied to agriculture through a flight demonstration. Discussion included drone technology for spreading cover crop seeds, mapping fields with optics technology and working in the field without physically interacting with the soil and crop. The demonstration was provided by Wonderfull Inc. and Brian Hall, an independent crop consultant.
 - d. Apple orchard equipment and technology: Students learned about the different types of equipment and technologies used for tasks in apple farming and orchard management, from planting to harvest. This included GPS guided orchard planting, variable spaying, optics for crop benchmarking, and pruning equipment to name a few. This demonstration was provided by Kirk Kemp from Algoma Orchards.
- 4.4 Career opportunities in agriculture was a key theme for the field day. Students learned about the variety of opportunities to work in agriculture, including computer programming, soil science, equipment mechanics, customer relations, among many others. The field day featured a lunch time speaker, Paula West from AgCareers.com, to share her journey into working in agriculture and her perspective on the wide variety of rewarding careers in agriculture.
- 4.5 Students and teachers participating in the field day completed evaluations which identified that most students hadn't considered a career in agriculture prior to attending. The field day demonstrations were a highlight for the students and the

teachers appreciated the interactive learning opportunities that were delivered. Student comments on the highlights of the day included:

- a. Interesting to see the evolution of technology used in farming and how it is so important for food production.
- b. Interesting to see the process of testing the soil health and how it related to chemistry and biology.
- c. Learned a lot about the different types of jobs needed to make farming happen.
- d. It's cool to see the equipment that is used and how it relates back to the environment.
- e. Benefits from being precise with farming inputs and this is where technology, programming and equipment helps the farm and the environment.

4.6 The Precision Agriculture Field Day was very well received by attendees. Many noted they appreciated learning more about agriculture and the opportunities that exist beyond farming.

5. Relationship to Strategic Plan

5.1 This report aligns with/addresses the following strategic goals and priorities in the Durham Region Strategic Plan:

- a. Goal 3: Economic Prosperity
 - 3.5 Provide a supportive environment for agriculture and agri-food industries: Agriculture and agri-food industries are key drivers of our regional economy.

6. Conclusion

6.1 The Precision Agriculture Field Day provided an opportunity to showcase some of Durham's most advanced farmers, farming operations and precision agriculture specialists while encouraging the growth of the future agriculture workforce in Durham Region.

6.2 A similar event will be hosted again in the future to continue to promote and educate about the opportunities for careers and advanced technology in Durham agriculture.

6.3 We are grateful to have the support of the agriculture community to deliver this event. It would not be possible without them volunteering their time, equipment, and expertise. This event was delivered with the support of 20 volunteers.

Respectfully submitted,

Original signed by

Brian Bridgeman, MCIP, RPP, PLE
Commissioner of Planning and
Economic Development