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Segway HT (Human Transporter)
Council Report

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April 27, 2004

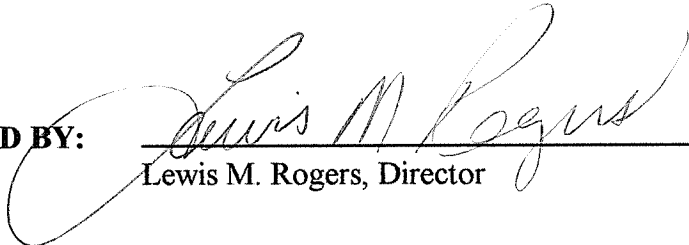


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Halifax Regional Council
April 27, 2004

TO: Mayor Kelly and Members of Halifax Regional Council

SUBMITTED BY:


Lewis M. Rogers, Director

DATE: April 19, 2004

SUBJECT: Segway HT (Human Transporter)

INFORMATION REPORT

ORIGIN

Staff

BACKGROUND

Steady growth of HRM's economy and population, combined with continually rising expectations of residents, visitors and Council has created significant increases in the volume of work for Recreation, Tourism and Culture (RTC). This growth has enhanced the number and caliber of civic events and the number of visitors coming to the municipality. In Civic Events and Festivals, continued success has resulted in increasing demands on both financial and staff resources. In Visitor Services, economic growth, increased awareness of HRM as a destination, and development of the tourism industry across Nova Scotia are some of the factors which are driving demand.

Recreation, Tourism and Culture must continue to act as a champion for these issues as they are vital economic drivers and integral components of "pride of place" for citizens. While unable to control growth, the Business Unit must respond effectively and logically to the increasing demands. Managing expectations as ongoing success continues to "raise the bar" is the challenge.

DISCUSSION

The Segway HT (see attachment for description and details) is being introduced as a tool to facilitate enhancement of the programs of Civic Events and Festivals as well as Visitor Services. The Segway HT will enable more efficient on-site management of large, unique events such as Tall Ships. It will also assist Recreation, Tourism and Culture in addressing some of the pressures which exist as a result of the growth experienced in HRM. The introduction of this innovative tool is in response to the increase in demand for the time and expertise of Civic Events staff. The Segway HT allows them to do more in the same amount of time, thereby enhancing our quality of effort.

For Visitor Services, the Segway HT will provide a means of reaching visitors where they are rather than waiting for them to come to us. It will provide an excellent opportunity to enhance the "sell" element of Visitor Services and encourage visitors to stay longer in our region and experience more while they are here. The nature of travel is evolving and visitor servicing must evolve at the same time. Visitors demand more information when and where they want it, at their convenience. The Segway HT enhances the profile of HRM as we compete on the world stage as a destination.

Staff of both Civic Events and Festivals and Visitor Services will be using the Segway HT's as a transportation device. These staff will be fully trained in the use of the Segway HT with a heavy concentration on safety. For Civic Events and Festivals, staff will ride the Segway HT's during event set-up and operation. The Segway's will allow them to move more freely, quickly and efficiently on large sites when time and energy are at a premium. This is an ideal application for large, unique events such as Tall Ships.

Visitor Services staff will be riding the Segway HT's on the boardwalk along the Halifax waterfront. They will carry up to 70 pounds of HRM Visitor Maps and Greater Halifax Visitor Guides to allow them to provide information to visitors. The Segway HT's will allow them to carry a significantly larger amount of literature than would otherwise be possible and to be completely mobile throughout the day. The staff will be able to move freely and easily to where visitors are located providing a mobile visitor information service.

BUDGET IMPLICATIONS

Costs to operate the Segway HT's, including staff costs, have been incorporated into Recreation, Tourism and Culture's Operating Budget for 2004/05.

FINANCIAL MANAGEMENT POLICIES / BUSINESS PLAN

This report complies with the Municipality's Multi-Year Financial Strategy, the approved Operating, Capital and Reserve budgets, policies and procedures regarding withdrawals from the utilization of Capital and Operating reserves, as well as any relevant legislation.

ALTERNATIVES

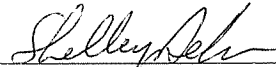
There are no recommended alternatives.

ATTACHMENTS

Description and details on the Segway HT.

Additional copies of this report, and information on its status, can be obtained by contacting the Office of the Municipal Clerk at 490-4210, or Fax 490-4208.

Report Prepared by:



Shelley Acker, Manager, Visitor Services

490-7395

Segway HT (Human Transporter)

(Information provided by the Segway Company)

What is the Segway HT?

The Segway is the first self-balancing, electric-powered human transportation device. With dimensions no larger than the average adult body and the ability to emulate human balance, the Segway uses the same space as a pedestrian, and can go wherever a person can walk. It allows people at home and at work to go farther, move more quickly, and increase the amount they can carry anywhere they currently walk. It is very quiet and is harmless to the environment as it does not emit emissions. It's batteries may be recharged by simply plugging it into a standard wall outlet, costing about 10 cents of energy a day to charge.

How does the Segway work?

The Segway team developed a breakthrough technology termed "dynamic stabilization," which is the essence of the Segway. Dynamic stabilization enables the Segway to work seamlessly with the body's movements, as it is modelled after the human body. Instead of legs, it has wheels. Instead of muscles, it has a motor. Instead of a brain, it has microprocessors and sensors, which helps the machine balance, much like a human's inner ear. Gyroscopes and tilt sensors in the unit monitor a rider's center of gravity at about 100 times a second. When the rider leans slightly forward, the Segway moves forward. When the rider leans slightly back, the Segway moves backward.

What does the Segway allow people to do?

Simply put, the Segway allows a people to travel farther, move quicker and carry more. The Segway is used in a multitude of consumer and commercial settings. For personal use, it can be used to commute to work, run errands, visit family and friends, explore your community, and have lots of fun doing everyday things. For commercial settings, the Segway is ideally suited for large scale manufacturing plants and warehousing operations, travel and tourism, public safety, corporate and campus transportation, as well as mail, package and product delivery.

What is the background of Segway?

Segway LLC, based in Manchester, N.H., was founded by inventor and entrepreneur, Dean Kamen, to transform the way people work and live. The Segway is the result of years of research and development led by Kamen with the goal of building something that would make a unique and lasting contribution to society.

Can the Segway be used in varying environments with different climates and terrains?

Yes. Like a person walking, all that a Segway requires is traction to operate in any environment. The device is completely sealed to allow it to operate in wet weather. Electronics, batteries, motors and all other components are environmentally-sealed to protect them from harsh and changing environments. The standard tires were optimized for a range of terrain and environmental conditions.

Segway also offers enhanced traction tires for better performance on a wide variety of surfaces. They work in rain and snow, can travel bumpy roads and tolerate weather extremes as well as an automobile. The Segway has been extensively tested to withstand vibration, varying temperatures, and exposure to moisture

How fast can the Segway travel?

The Segway has three different speeds that riders may choose from depending on riding environment and level of experience. The Beginner Key (maximum speed of 6 mph and slowest turning rate), allows riders to gain confidence using the machine. The Sidewalk Key (maximum speed of 8 mph and a medium turning rate), allows riders to adapt well in pedestrian environments. The Open Environment Key (maximum speed of 12.5 mph and the most responsive turning rate), allows riders to comfortably cover open spaces. And, it travels 10 to 15 miles on a single charge of its batteries, which can be recharged in a few hours simply by plugging it into a standard wall outlet.

How safe is the Segway?

The utmost care and research has gone into ensuring that the Segway is safe. Its balancing technology is truly revolutionary and provides an exceptional riding experience. The Segway has redundant systems and sophisticated alerts built into its design, and many thousands of hours of use have demonstrated that it is safe when used appropriately. It is important that Segway riders understand their responsibility to ride safely.

Proper skill level and understanding of the Segway prevents injuries caused by loss of control or misuse. Keep in mind that the Segway has not been designed, tested, or approved as a medical device.

How does the Segway safely integrate into pedestrian environments?

Just as pedestrians adjust their walking and jogging tempo to match that of those around them, Segway riders adjust the Segway for pedestrian environments. The machine was designed to respond to rider's movements - lean forward, go forward; lean back, go back - so that it could easily become an extension of one's own body. Its compact dimensions and ability to emulate human balance, makes the Segway ideal for safely navigating densely populated areas. Thousands of hours of sidewalk and other pedestrian environment use by police, emergency medical technicians and postal workers is testimony to the safety and utility of the Segway.

The Segway is not a vehicle, and is not meant to compete with the automobile or be used on roadways in regular traffic. It's intended use is for areas in which people would typically walk, such as sidewalks and boardwalks.

Does the Segway work indoors?

Yes. Every Segway is designed to work anywhere people walk. In order to support indoor operation, Michelin created a special tire that is non-marring. The Segway is narrower than a standard doorway, is clean, quiet and there are zero emissions.

How long will a Segway last?

The Segway has been designed to be extremely durable. In order to deliver a durable productivity tool, Segway engineers pursued two design avenues. First, they built durable mechanical and electrical systems to be in solid state, so even the moving parts were designed for longevity. For example, the motors are brushless servomotors, so there are no parts that could wear out. Then, the systems were subjected to extensive, rigorous testing to have it perform in nearly every environmental condition a rider may encounter, to ensure their goals were met. Second, a modular design was created whereby if any part were to wear out or break, it could easily be replaced, ensuring a long product life. It has been precision engineered for virtually maintenance-free operation.

What kind of training is involved with learning how to operate the Segway HT?

Rigorous training from the manufacturer is included as part of your purchase, which Segway strongly recommends its customers utilize. And, it also comes with a Safety Video and Riders Guide.

Who can ride the Segway?

The Segway is designed to be operated by a wide range of people after receiving orientation — no special skills are required. The rider must be able to do the following:

- Step on and off the Segway without assistance, which requires physical abilities similar to climbing and descending stairs without assistance or use of a handrail;
- Rider must weigh between 100 and 250 pounds (for the i or e Series - which is what HRM currently has) or 100 and 200 pounds (for the p Series);
- Rider must be able to operate the steering control with his or her left hand.

Segway recommends that riders be 16 years or older. It is important to note that the Segway has not been designed, tested, or approved as a medical device.

Who Invented the Segway?

This device is the creation of Dean Kamen, a 52-year-old self-taught physicist, mechanical engineer (and college dropout) who has built a multi-million dollar technological empire out of his fertile brain, and developed a deserved reputation as a design wizard, especially in the field of medical technology.

Dean Kamen holds more than 150 U.S. and foreign patents related to medical devices, climate control systems, and helicopter design. He's an inventor whose rebellion against convention has consistently yielded smart solutions. While still in college, for example, he invented the first drug-infusion pump, and later the first portable insulin pump and first portable dialysis machine.

What other places are using Segway HT's?

Segways are in some of the world's leading corporations and service organizations including Canada Post and the U.S. Postal Service, National Park Service, the City of Atlanta's Ambassador program, Michelin, GE Plastics and various Hospitals, Universities and Airports to name just a few.

To learn more about Segway and the company, please visit them on-line at www.segway.com

