



THE ROYAL ASTRONOMICAL SOCIETY OF CANADA
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Total Solar Eclipse Planning for Municipalities and Public Space Managers

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Background Information

On April 8th, 2024, portions of south-central and eastern Canada will experience one of the wonders of nature – a total solar eclipse. A total eclipse is a special event and, as it draws nearer, will capture the interest of both enthusiasts and the public alike. This April 8th, 2024 eclipse is significant in that it will be experienced by, or near, some of the most populous areas in Canada. Such an event requires preparation by communities within the path of the eclipse to address the logistics of an influx of visitors, as well as to maximize benefits to the community in both the short and long term. This document lays out some of the considerations that communities experiencing the eclipse will need to incorporate into their eclipse planning.

What is an eclipse?

A total solar eclipse occurs when the moon blocks out the sun in the sky. This phenomenon occurs because the sun and the moon appear to be almost the exact same size when viewed from Earth. The moment when the sun is completely blocked by the moon is referred to as “totality”. Although there is, on average, a total solar eclipse visible somewhere on Earth every two years, it is rarely in your own backyard. This is why this is a once-in-a-lifetime event - a total eclipse takes place every 375 to 400 years in a given location on Earth and will be happening right here in 2024.

What can you expect during a total solar eclipse?

As the Moon passes between the Sun and the Earth, the Moon begins to block out some of the Sun’s light, casting a shadow on the Earth. A small “bite” appears on the edge of the Sun and continues to spread across until a thin crescent of the sun is left visible.

As the moon completely blocks the solar disk (also called “totality”), tiny specks of light become visible around the edge of the sun, called “Baily’s Beads” – these are the last rays of sun shining through valleys on the edge of the Moon. Totality is also the only time that the sun’s ghostly and spectacular corona (or outer atmosphere) is visible, surrounding what appears to be a black hole in the sky. As observers are plunged into the moon’s shadow, a sunset-like reddish glow can be seen in the horizon, planets and bright stars become visible during the day, birds return to their nests for the “night”, and light and shadows take on a quality unique only to total solar eclipses. Total solar eclipses are one of the marvels of the natural world and it is not unusual for people to become enamoured with “chasing” them after experiencing their first.

Solar eclipse safety

- **Never look directly at the Sun without using protective filters that comply with the ISO 12312-2: 2015 standard.** Even when almost the entire Sun is covered by the Moon, light from the remaining crescent Sun is intense enough to cause a retinal injury. Solar eclipse viewers and glasses are designed to give a safe comfortable view of the partly eclipsed Sun. **Sunglasses (even multiple pairs), smoked glass and space blankets are not safe substitutes.**



- Solar eclipse viewers and glasses that comply with the ISO 12312-2: 2015 standard must have labels to that effect. The manufacturer or distributor must be able to provide proof of compliance on request.
- You **can** remove solar viewers and look directly at an eclipse **only during totality** (when the moon is completely blocking the sun) and **if you are in the path of totality**. Totality only spans a few seconds to a few minutes, depending on where you are located in the path of totality. Totality on April 8, 2024, in Ontario will last up to 3.5 minutes
- **If you wish to order solar glasses or viewers for events or staff, you must order them now. You cannot order these early enough.** There will be an enormous demand for solar viewers leading up to eclipse day. Before placing an order, ensure that the manufacturer or distributor provides proof of compliance of their products with ISO 12312-2: 2015.



Preparing for a Total Solar Eclipse

What influences where people choose to see an eclipse

- The amount of time that totality is experienced in a particular geographical area
- Favourable weather conditions
- Natural beauty or iconic viewing areas
- Accessibility

Benefits of Total Eclipse Planning and Preparation

- Eclipse planning can be both a tourism and community development opportunity. Either way, this is an opportunity and not just an uncontrollable event to “get through”
- Lasting benefits of preparation can include new working partnerships, increased community focus and volunteering, improved communication strategies, development of marketing materials and media plans, and forming a cohesive community identity. Engaging the community in what they are about to experience can mitigate “totality apathy” or frustration at the increasing media frenzy that will surround the eclipse in the weeks leading up to it.
- This is also a great opportunity to showcase your community and sites while there is high media attention on the Canadian path of totality.
- The community can see these benefits – including increased marketing, media coverage, and public engagement - even if the weather is not favourable on eclipse day.
- Even parks or viewing sites that are outside the path of totality can tap into the excitement of the eclipse and set up programming and other draws for audiences

Leadership and Staff Resources

- Organizational leadership (Council, Boards, Senior Leadership Team) need to have an understanding about the eclipse well in advance to ensure that effective preparations are made. This understanding should include:
 - What an eclipse is
 - What the experience of a total eclipse is like
 - What communities and sites can expect in the days leading up to the eclipse and the eclipse day itself
 - Logistical preparations



- How the community/sites can benefit from preparing for the eclipse and engaging residents, visitors and other audiences.
- It is helpful to have a dedicated staff person to coordinate and champion eclipse-related planning. This eclipse coordinator could be a new temporary role or could be rolled into an existing role for a period of time. However, for work planning purposes, note that the intensity of this role will increase in the weeks and days leading up to the eclipse.
- The eclipse coordinator would coordinate with various divisions, departments and other teams to address some of the following actions:
 - A media plan
 - Transportation and parking plans
 - Emergency preparedness plan
 - Developing tourism and marketing plans, ideally that will have longevity past the eclipse day
 - Volunteer coordination
 - Events, engagement and information for residents leading up to the eclipse day
 - Events and safe viewing locations for visitors and residents on eclipse day
 - Post-eclipse data gathering and reporting

Eclipse Planning Considerations

- **Estimating accurate visitor numbers:** This can be difficult given the uncertainty of cloud cover in April. In 2017, communities along the eclipse path saw up to a 50% increase in population on eclipse day. As a starting point for determining estimates, look at attendance at large events in the region that typically draw crowds from outside the area. Friday the 13th in Port Dover or New Year's Eve in Niagara Falls would be a good example of such an event for visitor estimation purposes.
- **Messaging should emphasize that eclipse watchers should be at their location of choice 24-48 hours in advance ("Come early, stay late!")**
- **Transportation:** Eclipse watchers will come into the area anywhere from a few days to a few hours beforehand. Some may change their plans dependent on weather and you may have fewer – or far more – eclipse watchers than expected entering the community and sites.
 - Communities in previous paths of totality have reported traffic jams on eclipse day lasting up to 12 hours. Be prepared for the need to direct traffic and communicate any planned road closures in advance.



- Eclipse watchers may stagger their arrival to preferred viewing sites over 24 hours prior to the actual site. However, there will likely be a mass movement of people away from viewing sites soon after the eclipse has taken place.
- Incorporate traffic considerations into staff workplans for the eclipse day – your staff may have difficulty moving around the area.
- Some private property owners may offer parking on their land for a fee to eclipse viewers, which can affect traffic flow.
- Consider staging crash response crews (e.g. tow trucks) at strategic locations to help clear roads as quickly as possible in the event of traffic incidents.
- **Accommodations:** You can expect a significant increase in visitors leading up to eclipse day. Visitors may cancel their plans at the last minute if the weather looks like it will not cooperate. Conversely, an unexpectedly large number of visitors may arrive at the last minute if weather is favourable. You may want to consider opening campgrounds earlier in the season than usual to accommodate increased visitors, some of whom will be travelling with tents, trailers or RVs. This gives visitors an appropriate location to camp or park, rather than having visitors set up in less desirable areas (e.g. other public spaces, private property without permission).
- **Identification of appropriate sites and venues for eclipse viewing:** It can be helpful to designate sites that you would like eclipse viewers to go to. The following considerations should be kept in mind:
 - Sufficient space for large crowds, including open areas for viewing. Sports stadiums and certain parks can work well.
 - Planning for additional parking and having coordinated ingress and egress plans. This could include pre-registration and/or designated times for arrival
 - Consider which site(s) you would like to highlight to both residents and visitors. This can be an opportunity to introduce an underused site or hidden gem that eclipse watchers may then want to visit again later. Try to prepare so you can show the site in its best light.
 - Consider where the public will want to view the eclipse in order to enhance their experience. Many eclipse viewers will seek out natural settings (parks, conservation areas) or iconic sites (Niagara Falls)
- **Eclipse Day Events and Activities:** These should take place at designated viewing sites but may also take place elsewhere. Events and activities can be held by your own organization, as well as by partners:
 - The eclipse will be a great opportunity to introduce and educate your staff to this natural phenomenon, enabling them to become eclipse champions. However, you do not have to develop and deliver activities and programming yourself. Many organizations, such as



libraries, schools, museums, science centres, or astronomy clubs, may also offer programming and can be partners.

- April 8th, 2024 is a Monday and schools will be in session, creating demand from school groups. For Ontario, the total phase occurs between approximately 3:15 and 3:20 pm
- Activities and programming should be planned that can take place if the weather does not cooperate.
- Offer programming that lasts after the eclipse to spread out the departure of visitors. Consider programming in the days leading up to the eclipse and in the days afterwards, or a multi-day eclipse festival.
- When partnering with outside organizations or partners, consider proactive coordination to ensure that contacts are set up and any messaging is aligned.
- Eclipses have been a powerful experience for humans throughout history and creating cultural and heritage connections as part of events and programming can make the eclipse even more meaningful. Some sites have achieved this through inviting Indigenous community participation, highlighting archaeoastronomy, sharing traditional wayfinding practices, and other topics related to culture, astronomy and the sky.
- Even a partial eclipse is an amazing experience and will catch the interest of the public. Sites and communities outside the path of totality should also consider eclipse day events and programming.
- There are apps (e.g. Total Eclipse Viewer) that will help to walk you through what is happening during the eclipse.

Marketing your community and creating longer term benefits

- While an eclipse is a single-day phenomenon, the associated planning and marketing of your community for eclipse day can be done in a way that creates longer term benefits
- Consider how the marketing of the eclipse and surrounding events, programming and preparations can contribute to other goals for the community. The path of totality will cross many communities in North America. When developing marketing plans for the eclipse, consider the following:
 - What is unique about your community and what are you typically known for?
 - What is unique about your location in the path of totality and compared to other similarly located communities?
 - What is your current community “brand” and how can it be woven into the eclipse?
 - How can you brand the eclipse in your community and associated eclipse events?



- How does marketing of the eclipse fit into longer-term goals of your community?
- If done right, community planning for the eclipse can include additional benefits such as:
 - New partnerships that support tourism, economic development, and natural and cultural heritage
 - Increased attention to and “discovery” of your community and sites
 - Improved inter-departmental coordination that can be leveraged for other projects
 - More engaged staff and community members
 - A greater focus on STEM fields within the community and among students
 - A tangible example or case study of what can be achieved by aligned partnerships and inter-departmental collaboration, made all the more memorable by being crowned with one of the most dramatic natural phenomenon on Earth.

For More Information Contact:

eclipse@rasc.ca



Resources

The following resources were utilized in compiling this guide and can be referenced for further information:

[American Astronomical Society Solar Eclipse Resources](#)

Articles from Vol. 516 of the Astronomical Society of the Pacific Conference Series, [Celebrating the 2017 Great American Eclipse: Lessons Learned from the Path of Totality](#), including:

Davis, A., Cook, S., Engler, M., Jones, A., Melena, S., Olson, J.G., and Paglierani, R. 2019. See you in the Shadow: A National Parks and NASA Collaboration. Celebrating the 2017 Great American Eclipse: Lessons Learned from the Path of Totality ASP Conference Series, Vol. 516: 365-389

Edson, S. 2019. Partially Prepared: Large-Scale Eclipse Education. Celebrating the 2017 Great American Eclipse: Lessons Learned from the Path of Totality ASP Conference Series, Vol. 516: 5-13

Parvinashtani, N., Hopps, A, and Radow, L. 2019. Transportation Planning and Preparation for 2017 Solar Eclipse. Celebrating the 2017 Great American Eclipse: Lessons Learned from the Path of Totality ASP Conference Series, Vol. 516: 269-276.

Russo, K. 2022. Community Solar Eclipse Planning: A Guide for Communities in the Path of Totality. [Being In the Shadow](#).

Russo, K. 2019. Shining a Light on Communities Within the Shadow. Celebrating the 2017 Great American Eclipse: Lessons Learned from the Path of Totality ASP Conference Series, Vol. 516: 221-227

Zych, A. 2019. A Just-In-Time Strategy for Sharing Eclipse Viewing Information. Celebrating the 2017 Great American Eclipse: Lessons Learned from the Path of Totality ASP Conference Series, Vol. 516: 229-236.