

HtO Park Methods Document

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This Methods Document was produced in 2016 to accompany a *Landscape Performance Series* Case Study Brief on landscapeperformance.org. The Case Study Brief and this Methods Document were produced as part of the Landscape Architecture Foundation's *Case Study Investigation* program, a unique research collaboration that matches LAF-funded faculty-student research teams with leading practitioners to document the benefits of exemplary high-performing landscapes.

The Case Study Brief for this project can be found at <https://landscapeperformance.org/case-study-briefs/hto-park>

Landscape Performance Benefits

Environmental Benefits

Environmental Benefit 1:

Capped 5.68 acres of contaminated soil, sealing it under 5,250 cubic yards of soil.

Sources

Hu and Desfor. 2011. *Reshaping Toronto's Waterfront*. Toronto: University of Toronto Press.
Ontario Ministry of Natural Resources. 2006. *Guidelines for Use at Contaminated Sites in Ontario*. Toronto: Queen's Park Printer for Ontario.

Janet Rosenberg Studio. 'Grading Plan.'

TEDCO. 1997. *Soil and Groundwater Strategy for TEDCO Lands in the Port Area*. Prepared by Angus Environmental Ltd., INTERA Consultants Ltd., and E. Addison Lall & Associates. Toronto: TEDCO.

TEDCO. 2011. *Preliminary Environmental Liability Assessment*. Prepared by Decommissioning Consulting Services Ltd. Toronto: TEDCO.

Environmental Benefit 2:

Detains 100% of annual rainfall on-site, equivalent to 4.8 million gallons per year, and slowly releases it into Lake Ontario.

Sources

For total annual precipitation, please see Statistics Canada's *Weather Conditions in Capital and Major Cities*, <http://www.statcan.gc.ca/tables-tableaux/sum-som/l01/cst01/phys08a-eng.htm>

Janet Rosenberg Studio. Please see construction drawings for both east and west parks, 'Revised Grading Plans' and 'Servicing Plan' and 'Landscape Details.'

Environmental Benefit 3:

Contributed to an increase in diversity of fish species from 6 in 2007 to 11 in 2014 in the slips adjacent to the park.

Sources

Janet Rosenberg Construction documents; 'Fish Compensation Plan' and 'Landscape Details.'

WATERFRONToronto, "Habitat Creation and Restoration," in *Corporate Social Responsibility & Sustainability Report*, 2015.

[http://sr.waterfrontoronto.ca/en/resourcesGeneral/Waterfront Toronto Full Report v2.pdf](http://sr.waterfrontoronto.ca/en/resourcesGeneral/Waterfront_Toronto_Full_Report_v2.pdf)

Environmental Benefit 4:

Sequesters an estimated 1,166 lbs of atmospheric carbon per year in the planting of 106 new trees.

Calculations

Tree count gathered by site visits conducted by University of Toronto team and includes 50 Golden Weeping Willows (*Salix alba 'Tristis'*) and 56 Silver Maples (*Acer saccharinum*).

GHGs reduced from planting trees (lbs) = 106 trees planted x 11 lbs/year = 1166 lbs of carbon per year

Sources

Calculation does not account for tree size and species, and is only an estimation.

Sources

Janet Rosenberg Construction documents; 'Planting Plan'

Toronto's "LiveGreen Toronto Quantification Guide"

<https://www1.toronto.ca/City%20of%20Toronto/Environment%20and%20Energy/Programs%20for%20Residents/PDFs/Live%20Green%20Grants/Project%20Quantification%20Guidelines%202011.pdf>

Social Benefits

Social Benefit 1:

Serves as a destination park with 65% of 23 survey respondents coming from outside of Toronto.

Calculations

Please see Appendix C for detailed survey results including dates, times, weather, number of individuals approached, number of individuals who completed survey, and their responses.

Limitations

For University of Toronto conducted surveys, please see the methodology outlined below and in Appendix B and C as approved by the University of Toronto on May 31, 2016.

Sources

Please see Appendix C-CSI survey results.

Our method was to interview visitors to three relatively new public parks along the Toronto waterfront about their experience and perception of the park and its context. We surveyed a total of 23 people at HtO (2 surveys short of our goal of 25) over the course of a three-month period including June, July, and August 2016. Interviews were conducted on each site during a weekend day. The graduate research assistant approached individual subjects, identified herself as a researcher and asked subjects to participate in a voluntary interview designed to gauge the park's social benefits. The interviews were anonymous with no personal data collected.

Social Benefit 2:

Attracts visitors for its amenities; 57% of 23 respondents visited the park for proximity to water, and 26% visited for access to the beach.

Calculations

Please see Appendix C for detailed survey results including dates, times, weather, number of individuals approached, number of individuals who completed survey, and their responses.

Limitations

For U of T conducted surveys, please see the methodology outlined below and in Appendix B and C as approved by the University of Toronto on May 31, 2016.

Sources

Please see Appendix C-CSI survey results.

Cost Comparison

Cost Comparison: Contaminated Soil

Had HTO used traditional contaminated site soil treatment methods including either recycling soil off-site or dig-and-dump, it would have required an up-front cost of \$24 million or \$25.3 million respectively. The high cost of these traditional estimates is due to both the size of the site and the depth now required to excavate contaminated sites for public use. Instead, an estimated \$22-23 million was saved by capping the site at the previously existing ground plane at a cost of approximately \$1.5 million, which meant building up the site through the use of aggregate, concrete and varying soil dunes to allow safe use of the site. Additionally, the need to transport 534,308 tons of soil and debris off-site to the nearest soil cleaning facility, equivalent to 38,165 triple axle truck trips, was eliminated.

Calculations

	HIO WEST				HIO WEST-CONDO				HIO EAST				HIO EAST-FIRE STATION			
CAPPING	est qty	unit	unit price	total	est qty	unit	unit price	total	est qty	unit	unit price	total	est qty	unit	unit price	total
preparation																
proof roll and rough grade	4820	m2	\$2.50	\$12,050.00	1867	m2	\$2.50	\$4,667.50	12123	m2	\$2.50	\$30,307.50	742	m2	\$2.50	\$1,855.00
add contours to site		m2	\$1.50	\$0.00		m2	\$1.50	\$0.00	16355	m2	\$1.50	\$24,532.50		m2	\$1.50	\$0.00
hard surfaces																
stabilized granular paving	412	m2	\$32.00	\$13,184.00	123	m2	\$32.00	\$3,936.00	1547	m2	\$32.00	\$49,504.00	75	m2	\$32.00	\$2,400.00
stabilized granular paving on structural slab		m2	\$32.00	\$0.00		m2	\$32.00	\$0.00		m2	\$32.00	\$0.00		m2	\$32.00	\$0.00
concrete light duty inc. granular base	670	m2	\$80.00	\$53,600.00	359	m2	\$80.00	\$28,720.00	2355	m2	\$80.00	\$188,400.00	50	m2	\$80.00	\$4,000.00
concrete heavy duty inc. granular base	1300	m2	\$120.00	\$156,000.00	121	m2	\$120.00	\$14,520.00	3613	m2	\$120.00	\$433,560.00		m2	\$120.00	\$0.00
stone paving incl concrete base		m2	\$500.00	\$0.00	29	m2	\$500.00	\$14,500.00	935	m2	\$500.00	\$467,500.00	20	m2	\$500.00	\$10,000.00
stone paving incl concrete base on structural slab	294	m2	\$500.00	\$147,000.00		m2	\$500.00	\$0.00		m2	\$500.00	\$0.00		m2	\$500.00	\$0.00
landscaping																
lawn dunes incl sod and topsoil	1710	m2	\$15.00	\$25,650.00	600	m2	\$15.00	\$9,000.00	3568	m2	\$15.00	\$53,520.00	550	m2	\$15.00	\$8,250.00
horticultural dunes incl plants na dsoil	195	m2	\$150.00	\$29,250.00	576	m2	\$150.00	\$86,400.00		m2	\$150.00	\$0.00		m2	\$150.00	\$0.00
soil for dunes	953	m3	\$25.00	\$23,825.00	588	m3	\$25.00	\$14,700.00	1784	m3	\$25.00	\$44,600.00	20	m3	\$25.00	\$500.00
TTL (to cap) each				\$460,559.00				\$176,443.50				\$1,291,924.00				\$27,005.00
TTL (to cap) HIO																\$1,495,372.50

TRADITIONAL OFFSITE SOIL CLEANING AND RECYCLING METHODS	est qty	unit	unit price	total
Recycle soil	534308	tons	\$45.00	\$24,043,860.00
Dig and dump	534308	tons	\$47.50	\$25,379,630.00

SCENARIO 1	
CAPPING HIO	\$1,495,372.50
TRADITIONAL recycle soil	\$24,043,860.00
COST SAVING	-\$22,548,487.50

SCENARIO 2	
CAPPING HIO	\$1,495,372.50
TRADITIONAL dig and dump	\$25,379,630.00
COST SAVING	-\$23,884,257.50

Limitations

Calculations made using design team estimates. As with all fill calculations, we assume +/- 20%.

Sources

Bloom Centre for Sustainability, "Bloom IQ Waterfront Toronto Soil Recycling Pilot," 2011.

<http://sr.waterfrontoronto.ca/en/environment/resources/BLOOM-IQ-WaterfrontToronto.pdf>

WATERFRONToronto, "Contaminated Soil Management," in *Corporate Social Responsibility & Sustainability Report*, 2015.

<http://sr.waterfrontoronto.ca/en/resourcesGeneral/Waterfront Toronto Full Report v2.pdf>

Appendix A - References

“2009 Professional Awards.” ASLA. Accessed March 02, 2016.
<https://www.asla.org/2009awards/518.html>

“Bloom IQ Waterfront Toronto Soil Recycling Pilot,” Bloom Centre for Sustainability, 2011.
<http://sr.waterfronttoronto.ca/en/environment/resources/BLOOM-IQ-WaterfrontToronto.pdf>

“Designing our Future: Sustainable Landscapes HtO Park, Toronto, Ontario, Canada.” ASLA. Accessed March 02, 2016.
<https://www.asla.org/sustainablelandscapes/hto.html>

“Economic Impact Analysis (2001-2013).” Prepared for Waterfront Toronto by urbanMetrics inc. Accessed May 10, 2016.
http://www.waterfronttoronto.ca/uploads/documents/economic_impact_analysis_2001_2013_1_1.pdf

“HTO.” *Landscape Architecture Works*. Accessed March 01, 2016.
<http://www.landezine.com/index.php/2010/05/hto/>

“HtO Park.” *City of Toronto*. Accessed February 26, 2016.
<http://www1.toronto.ca/wps/portal/contentonly?vgnextoid=38c8dada600f0410VgnVCM1000071d60f89RCRD>

“HtO – Urban Beach.” *Claude Cormier*. Accessed March 02, 2016.
<http://www.claudecormier.com/en/projet/hto-urban-beach/>

“HtO – Urban Beach.” *Janet Rosenberg and Associates*. Accessed March 02, 2016.
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Ontario Ministry of Natural Resources. 2006. *Guidelines for Use at Contaminated Sites in Ontario*. Toronto: Queen’s Park Printer for Ontario.

Reshaping Toronto’s Waterfront. Editors Gene Desfor and Jennefer Laidley. Toronto: University of Toronto Press, 2011.

Marshall, Sean. “HtO Park: Toronto’s Waterfront takes a big step forward.” *Spacing*. July 01 2007. Accessed March 01, 2016.
<http://spacing.ca/toronto/2007/06/17/hto-park-torontos-waterfront-takes-a-big-step-forward/>

Statistics Canada, “Weather conditions in capital and major cities (Precipitation),” 2007.
<http://www.statcan.gc.ca/tables-tableaux/sum-som/l01/cst01/phys08a-eng.htm>

TEDCO. 1997. *Soil and Groundwater Strategy for TEDCO Lands in the Port Area*. Prepared by

Angus Environmental Ltd., INTERA Consultants Ltd., and E. Addison Lall & Associates. Toronto: TEDCO.

TEDCO. 2011. *Preliminary Environmental Liability Assessment*. Prepared by Decommissioning Consulting Services Ltd. Toronto: TEDCO.

Toronto Live Green Quantification Guide.

<https://www1.toronto.ca/City%20Of%20Toronto/Environment%20and%20Energy/Programs%20for%20Residents/PDFs/Live%20Green%20Grants/Project%20Quantification%20Guidelines%202011.pdf>

Appendix B

Social Benefits - Oral interview guide

Approved by the University of Toronto on May 31, 2016.

1. Methodology:

Our method is to interview visitors to three relatively new public parks along the Toronto waterfront about their experience and perception of the park and its context. We anticipate surveying a sample of twenty-five people per site over the course of a two-week period in June 2016. Interviews will be conducted on each site during a weekday afternoon and evening and during a weekend afternoon and evening. Our graduate research assistant will approach individual subjects, identify herself as a researcher and ask subjects to participate in a voluntary interview designed to gauge the park's social benefits. The interviews will be anonymous and no personal data will be collected.

The interviews will address the following subjects:

- frequency of visits to the park
- distance from the interview subject's home
- whether the subject typically visits alone or as part of a group
- when the subject's visits to the park began
- the typical duration of the subject's visits
- the subject's activities at the park
- the subject's perception of the neighbourhood and waterfront and whether those perceptions changed since the opening of the park

Our study will also include a visual assessment of the numbers, ages and genders of people in the park. Our goal is to mirror this distribution in our interview sample.

2. Participants

The study aims to include a cross-sectional sample of people present in the park at any given moment. It is not intended to identify or study a particular group of park users. Participation is voluntary.

3. Potential harms

We are not aware of potential harms as the research method consists of a voluntary short interview (approximately five minutes) carried out in a public place.

4. Privacy and confidentiality

The interview will be anonymous and no personal information will be requested. We will inform potential subjects of these conditions when we ask them to participate.

5. Informed consent

We will ask for oral consent after we have explained the purpose and general outline of the

interview. We will record consent in our notes before beginning the interview.

Oral consent record and interview guide

Date:

Site:

Weather condition:

Time of day:

Number of people in the park:

Approximate age distribution:

Approximate gender distribution:

Obtaining oral consent:

My name is --, and I am a graduate student in landscape architecture at the University of Toronto. May I talk with you about your experience of this park as part of a research study about its social benefits to the community? The study is anonymous and I will not ask for any personal information. You may stop the interview at any time.

Record of consent:

(indicated by researcher)

Interview questions:

How often do you visit the park?

How far is the park from where you live?

Do you usually come to the park by yourself or in a group?

When did you begin visiting the park?

How long do you usually stay?

What do you usually do here?

How do you perceive the neighbourhood and the waterfront?

Contact information regarding Case Study Investigation in Landscape Performance (to be given to participants):

Thank you for your participation in our study about the social benefits of this park. If you have any questions about this anonymous research study you may contact the researchers at: landscapeperformance.utoronto@gmail.com. You can also contact the University of Toronto Office of Research Ethics (ethics.review@utoronto.ca, 416-946-3273), for confirmation that participant protection procedures have been followed consistent with:

www.research.utoronto.ca/wp-content/uploads/documents/2014/GUIDE-FOR-INFORMED-CONSENT-V-Oct-2014.pdf

Appendix C

Social Benefits - Oral interview results

Date:	June 12 2016										
Site:	HTO										
Weather condition:	57 - 67 F, partially sunny & windy										
Time of day:	12:00pm to 1:30pm										
Number of people in the park:	14										
Approximate age distribution:	8-65										
Approximate gender distribution: F:M	10:4										
Record of consent	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
How often do you visit the park?	once a week	once a week	first time	first time	first time	first time	first time	first time	first time	first time	first time
How far is the park from where you live?	> 15 km	> 15 km	>10000km	>10000km	>10000km	>10000km	>10000km	>10000km	>10000km	>10000km	>10000km
Do you usually come to the park by yourself or in a group?	group	group	group	group	group	group	group	group	group	group	group
When did you begin visiting the park?	2012	2012	2016	2016	2016	2016	2016	2016	2016	2016	2016
How long do you usually stay? (minutes)	30-60	30-60	30	30	30	30	30	30	30	30	30
What do you usually do here?	hang out by water	hang out by water	cooling off by lake and taking pictures	cooling off by lake and taking pictures	cooling off by lake and taking pictures	cooling off by lake and taking pictures	cooling off by lake and taking pictures	cooling off by lake and taking pictures	cooling off by lake and taking pictures	cooling off by lake and taking pictures	cooling off by lake and taking pictures
How do you perceive the neighbourhood and the waterfront?	busy, touristy	very busy	lots of families	beautiful, safe, clean, wish water was accessible	beautiful, safe, clean, wish water was accessible	beautiful, wish water was accessible	beautiful, wish water was accessible	beautiful, wish water was accessible	beautiful, wish water was accessible	beautiful, wish water was accessible	beautiful, wish water was accessible

Date:	July 10 2016						
Site:	HTO						
Weather condition:	63 - 84 F, sunny						
Time of day:	12:00pm to 1:30pm						
Number of people in the park:	32						
Approximate age distribution:	1-65						
Approximate gender distribution: F:M	15:17						
Record of consent	Yes	Yes	Yes	Yes	Yes	Yes	Yes
How often do you visit the park?	once a month	once a month	once a month	once a month	once a week	once a week	twice a month
How far is the park from where you live?	>15km	>1km	>1km	>1km	>20 km	> 15km	>10 km
Do you usually come to the park by yourself or in a group?	both	both	group	group	group	group	group
When did you begin visiting the park?	2012	2013	2014	2014	2014	2014	2014
How long do you usually stay? (minutes)							
What do you usually do here?	sit under trees or on benches	sit under trees or on benches	lay on beach, tan, by the lake	lay on beach, tan			
How do you perceive the neighbourhood and the waterfront?	nice but confusing to move around	nice but confusing to move around	much nicer than before	much nicer than before			

Date:	August 07 2016							
Site:	HTO							
Weather condition:	63 - 84 F, sunny							
Time of day:	12:00 pm to 2:00 pm							
Number of people in the park:	28							
Approximate age distribution:	1-65							
Approximate gender distribution: F:M	16:12							
Record of consent	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
How often do you visit the park?	once a month	once a month	once a month	once a week	once a month	once a month	once a month	> once a week
How far is the park from where you live?	> 15km	> 15km	>1km	>1km	>5km	>5km	>5km	>1km
Do you usually come to the park by yourself or in a group?	group	both	both	both	group	group	group	both
When did you begin visiting the park?	2010			2015				
How long do you usually stay? (minutes)	60-120	60-120	120	30	30-60	30-60	30-60	15-30
What do you usually do here?	hang out / lay on beach / sit under trees	hang out / lay on beach / sit under trees	sit under trees	have lunch	sit under trees or on benches	sit under trees or on benches	sit under trees or on benches	sit under trees or on benches
How do you perceive the neighbourhood and the waterfront?	Nice, clean but very busy	very busy	Busier than before	Busier than before	Clean and easier to bike	Easier to bike	Clean but confusing to walk around	