KPI CATEGORY	DIMENSION	MEASUREMENT	SCORE RANGE (1 = poor quality, 5 = excellent quality)	RATIONALE	SOURCES
Per park indicators					
Ecological	Temperature regulation	Leaf Area Index	1 = 0 - 1 (bare ground) 2 = 1 - 2 3 = 2 - 3 4 = 3 - 4 5 = 4 - 7 (very dense forest)	Several studies have reported the cooling effect of trees with dense foliage in urban areas (Dimoudi & Nikolopoulou, 2003; Hiraoka, 2005; Simpson, 2002). Lin & Lin (2010) found foliage density to offer the greatest contribution to surface-soil cooling foliage density. As a result, high Leaf Area Index (LAI) is expected to offer greater cooling than a lower LAI.	Dimoudi, A., & M. Nikolopoulou. (2003). Vegetation in the urban environment: Microclimatic analysis and benefits. Energy Build 35, 69–76. Hiraoka, H. (2005). An investigation of the effect of environmental factors on the budgets of heat, water vapor, and carbon dioxide within a tree. Energy 30, 281–298. Lin, B.S. & Lin, Y.J. (2010). Cooling effect of shade trees with different characteristics in a subtropical urban park. HortScience, 45, 83–86. Simpson, J.R. (2002). Improved estimates of treeshade effects on
		Width of blue space in a park	1= 0-10 m 2 = 10-20 m 3 = 20-30 m 4 = 30-40 m 5 = >40 m	Zhu et al. (2011) reported that a blue space of 40 m yields significant and stable effects of decreasing temperatures and increasing humidity in surrounding area. Whereas, 30 m width indicated noticeable but not significant effects on cooling. Therefore, anything less than 30 m is likely to not provide impact. As such, the scoring is based off these suggested widths and their associated impact.	Zhu, C. Y., Li, S. H., Ji, P., Ren, B. B., & Li, X. Y. (2011). Effects of the different width of urban green belts on the temperature and humidity. Acta Ecologica Sinica, 31(2), 383-394.
	Infiltration capacity	Stormwater capture potential based off total % green space	1 = 0-20% 2 = 20-40% 3 = 40-60% 4 = 60-80% 5 = 80-100%	The Pennsylvania Department of Environmental Protection stress that vegetation in parks provides essential services regarding stormwater and water infiltration management. The scoring represents five percentage categories based on the percentage of total green in a park environment. The highest percentage grade therefore indicates the park with the highest water infiltration potential	Pennsylvania Department of Environmental Protection (n.d). Top 10 Stormwater Best Management Practices for Parks. (http://www.iconservepa.org/cs/groups/public/documents/document/dcnr_006535.pdf)
		% of total green within a riparian zone that is 20 m in width	1 = 0-20% 2 = 20-40% 3 = 40-60% 4 = 60-80% 5 = 80-100%	According to Hawes & Smith (2005), a suggested optimal amount of buffer width for an area, an average width of 10m is suggested to prevent erosion and surface runoff. We can apply this to parks that are roughly 2 hectares in size. As we consider 10m in width to be the minimum/ average, we consider double (20m) this to be a high score (5). It was not possible to measure the complete width of a riparian zone since spatially, such zones are comprised of different elements, so we designed this indicator to measure the total percentage of green within an optimal riparian zone width of 20 m from adjacent water bodies.	Hawes, E., & Smith, M. (2005). Riparian buffer zones: Functions and recommended widths. Eightmile River Wild and Scenic Study Committee, 15.
		Total % of impervious surfaces	1 = 80-100% 2 = 60-80% 3 = 40-60% 4 = 20%-40% 5 = 0-20%	In contrast to pervious surfaces, Frazer (2005) reported its impervious counterpart (pavement) collects particulate matter from the atmosphere, nitrogen oxides from car exhaust, rubber particles from tires, phosphates from residential and agricultural fertilizers, and dozens of other pollutants. Pervious surfaces, which allow the percolation of water into the underlying soil, also increase the storage of flood flows. Parks with a higher percentage of pervious surfaces are favoured for their ecological benefits.	Frazer, L. (2005). Paving Paradise: The Peril of Impervious Surfaces. Environmental Health Perspectives, 113(7), 456–462.
Social	Amenities and recreational facillities	Presence of amenity and recreational facilities	1 = 0-20% 2 = 20-40% 3 = 40-60% 4 = 60-80% 5 = 80-100%	Taylor et al. (2011) identified various features of parks that influenced a public green space to be deemed as being of higher quality. Among these features, several types of amenities and recreational facilities are identified: formal organized sport activity facilities (ex. sports fields, goals, nets, etc.), informal sport acitivity areas (walking paths, playgrounds, basketball courts etc.), various types of amenities (ex. water points, waste bins, picnic tables, toilets, benches etc). Therefore, based off of these types of amenities, we formulated our indicator scoring around the basis of the amount/ percentage of such amenities and recreational facilities being present.	Taylor, B. T., Fernando, P., Bauman, A. E., Williamson, A., Craig, J. C., & Redman, S. (2011). Measuring the quality of public open space using Google Earth. American Journal of Preventive Medicine, 40(2), 105-112. Zhang, Y., Van den Berg, A. E., Van Dijk, T., & Weitkamp, G. (2017). Quality over Quantity: Contribution of Urban Green Space to Neighborhood Satisfaction. International journal of environmental research and public health, 14(5), 535-545.
	Greenness in winter	NDVI range	1 = 1-0.8, 2 = 0.8-0.6 3 = 0.6-0.4 4 = 0.4-0.2 5 = 0.2-0	Several studies (Pakzad et al., 2017; Ten Brink et al., 2016; Kabisch et al., 2016; Grahn & Stigdotter, 2010) indicate that having nature and greenery close to the living environment is beneficial for the physical and mental health considering reduced mortality, cardiovascular diseases, stress levels, allergies and metal illness. It is important to maintain these benefits during winter.	Grahn, P., & Stigsdotter, U. K. (2010). The relation between perceived sensory dimensions of urban green space and stress restoration. Landscape and urban planning, 94(3-4), 264-275. Kabisch, N., Strohbach, M., Haase, D., & Kronenberg, J. (2016). Urban green space availability in European cities. Ecological Indicators, 70, 586-596. Pakzad, P., Osmond, P., & Corkery, L. (2017). Developing key sustainability indicators for assessing green infrastructure performance. Procedia engineering, 180, 146-156. Brink P., ten, Mutafoglu K., Schweitzer J. P., Kettunen M., Twigger-Ross C., Baker J., Kuipers Y., Emonts M., Tyrväinen L., Hujala T., and Ojala A.
	Grey versus green	Ratio green:paved	1 = < 3:7 2= 4:6 3= 5:5 4 = 6:4 5 = > 7:3	Marcus and Barnes (1995) found the most effective layout of hospital gardens for mental and physical well-being to be a 7:3 ratio of green:paved. The ideal ratio for a city park has been extrapolated from this same ratio.	Marcus, C. C., & Barnes, M. (1995). Gardens in healthcare facilities: Uses, therapeutic benefits, and design recommendations. Center for Health Design, Concord.
Economic	Economic value of ecosystem services	Monetary value (US dollars) of a park	1 = 500-1,000 trees *$50 2 = 1,000-1,500 *$50 3 = 1,500-5,000 *$50 4 = 5,000 - 10,000 * $50 5 = 10,000+ *$50,-	Maco and McPherson (2003) used Davis, California (USA) as a model to assess the monetary benefit of the city's public and private trees. They found that Davis maintained nearly 24,000 public street that provided $1.2 million in net annual environmental and property value, or $50 per tree. This was extrapolated to estimate the economical value of one park.	Maco, S.E. & McPherson, E.G. (2003). A practical approach to assessing structure, function, and value of street tree populations in small communities. Journal of Arboriculture, 29(2), 84-97.
City-wide indicators					
Economic	Economic value of ecosystem services	Monetary value (US dollars) of a park	1 = 500-1,000 trees *$50 2 = 1,000-1,500 *$50 3 = 1,500-5,000 *$50 4 = 5,000 - 10,000 * $50 5 = 10,000+ *$50,-	Maco and McPherson (2003) used Davis, California (USA) as a model to assess the monetary benefit of the city's public and private trees. They found that Davis maintained nearly 24,000 public street that provided $1.2 million in net annual environmental and property value, or $50 per tree. This was extrapolated to estimate the economical value of one park.	Maco, S.E. & McPherson, E.G. (2003). A practical approach to assessing structure, function, and value of street tree populations in small communities. Journal of Arboriculture, 29(2), 84-97.
Social	Green share per capita	Green space per inhabitant	1 = 0 - 4 m2 2 = 4 - 7 m2 3 = 7 - 9 m2 4 = 9 - 18 m2 5 = > 18 m2	The World Health Organisation (2016) suggests a minimum of 9 m2 of urban green space per person. A middle score of three represents this minimum. Double the suggested space (18 m2) warrants a score of five. Adequate urban green space per capita has been associated with various health benefits. Ten Brink et al. (2016), for example, found higher shares of urban green space to be associated with 1.18 fewer antidepressant prescriptions per 1000 people.	Brink P., ten, Mutafoglu K., Schweitzer J. P., Kettunen M., Twigger-Ross C., Baker J., Kuipers Y., Emonts M., Tyrväinen L., Hujala T., and Ojala A. (2016). The Health and Social Benefits of Nature and Biodiversity Protection. A report for the European Commission, Institute for European Environmental Policy, London/Brussels. WHO (2016). Urban Green Spaces and Health. WHO European Centre for Environment and Health, Bonn.
	Accessibility	Walking distance from home to green	1 = > 1 hour 2 = 30 min - 1 hour 3 = 15 min - 30 min 4 = 10 min - 15 min 5 = < 10 min	The international target for urban green space, set by the World Health Organization in 2012, states that cities should provide their inhabitants with 9 m2 of green space per capita within a 15 minute walk of their home.	WHO (2016). Urban Green Spaces and Health. WHO European Centre for Environment and Health, Bonn.