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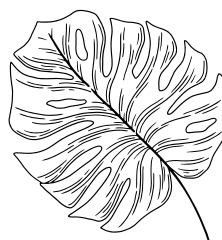
Measuring Park Quality for Youth 13-19

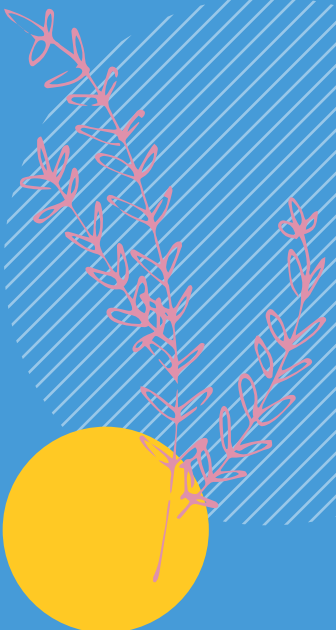
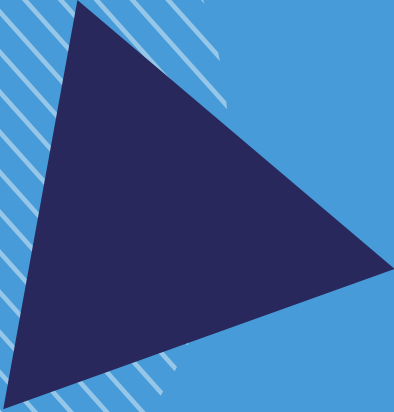


Jelena Kocmaruk
Langara Applied Planning Program Major Project

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*"[w]here aren't teenagers
seen as invaders? They are
too big, too loud, too old for
playgrounds, at least in the
eyes of parents; and too
young, too loud, too broke
for restaurants, bars and
stores"*

Lange (2021)



Introduction



Report Purpose


The purpose of this report is to better understand how public parks can meet the developmental, physical, and mental wellbeing needs of adolescents, in other words: what 'quality' parks look like for youth 13-19. Deliverables include a summary of contemporary research on adolescent needs and the characteristics that encourage park visitation, as well as an evaluative tool that can be altered or updated in the future to measure relative park quality for youth users and guide capital investment. A Vancouver case study is used to illustrate the applicability of the tool in planning for this population.



Walkway in Hinge Park (Kocmaruk 2021)

Methodology

- **Literature Review** - This focused on adolescent needs, quality measurement, and studies investigating youth park use. Particular attention was paid towards studies that reported gender-segregated results, or focused on adolescent girls' use of parks.
- **Matrix** - Throughout the literature review process, characteristics that were associated with youth park visitation were tracked in a matrix
- **Evaluative Tool** - Once the final list of characteristics had been completed, values were assigned to create the evaluative tool.
- **Case Study** - The tool was used to evaluate a sample of Vancouver parks in order to answer the two following questions within the local planning context:
 - *Are otherwise 'good' parks also good for youth?*
 - *Where is investment needed outside of Vancouver's 'Growth Areas' to meet youth needs?*



The Child-Friendly City (0-18) is "one that encompasses all aspects of a child and youth's healthy development including opportunities for connection, self-efficacy, and engagement"

*Ragan & McNulty (2004), as cited in
Cushing (2016, 155)*

Background



Youth & the Public Realm

A researcher that has devoted her career to learning about the role the built environment plays in youth development, health and well-being, Patsy Eubank Owens' work has found that adolescents have been 'designed out' of public spaces (Eubank Owens 2020). For both teens and others, adolescent use of public spaces can seem unusual, concerning, or even alarming. And while this is likely true to a certain extent for all teens, race, socio-economic status, and other demographic or identity markers can make the difference between a teen in public space being perceived as a nuisance and a criminal in need of policing (Campos-Manzo et al. 2020). One of Eubank Owens' qualitative studies provides a clear example of this: in interviews mostly racialized teen study participants shared that their presence was constantly questioned, regardless of what they were doing in public space, whether it was hanging out after school, or sitting on a bench (Eubank Owens 2018, 150).

In addition to identity-based policing, there are also broad societal perceptions, at least in the Western world, that contribute to scrutiny of teens in public spaces. Adult fear and perceptions of risk, as well as expectations that teens should always be engaged in 'meaningful' pursuits both result in increased surveillance of young people in public (Eubank Owens 2020, 10, 11, Woolley 2006, 47). These perceptions don't recognize adolescents' inherent need to play and their right, in line with that of the broader public, to get certain needs met in the public realm (Eubank Owens 2018, 147, Eubank Owens 2020).



Articles of the Convention on the Rights of the Child
(Childhood International, 2019)

Rights of Children

In 1989, the United Nations recognized the inherent rights of children (defined in the treaty as anyone under the age of 18) to “rest and leisure, to engage in play and recreational activities appropriate to the age of the child”, and the complementary responsibility of states to provide opportunities for these activities (United Nations Human Rights Office of the High Commissioner 1989). Canada has since ratified this treaty, and slowly ideas about how planners, designers, and architects can ensure that cities are providing appropriate spaces for children in the public realm have trickled into their respective professions.

However, much of this nascent attention has been focused on leisure opportunities for children 12 and under. In contrast, for youth aged 13-19 (henceforth referred to as ‘adolescents’, ‘youth’, or ‘teens’) rather than desirable, unstructured and unsupervised play continues to be seen as dangerous or destructive, and facilities for such leisure for this age range tend to be nonexistent (Eubanks Owens 2018, 147). This means that teens are losing out on the opportunity to interact socially, challenge themselves, and manage their own time outside of the supervision of adults (Eubanks Owens 2018, 147).

Instead, planning for teens across North American planning practice has coalesced into one of two areas: service planning and integration and/or youth civic engagement (Cushing 2016, 163). Although when asked, youth generally express wanting to see improvements in their physical environments, Cushing found that the outcomes of youth-specific planning rarely addressed these needs, rather outcomes focused on coordination and access to services (Cushing 2016, 155, 165). As such, one of Cushing’s key recommendations for planners was to “focus on changes to the physical environment, such as the provision of skate parks, sidewalks, parks, safe roads and other spaces” (Cushing 2016, 169).

Youth Park Use & Gender Disparity

In the meantime, teens are spending less time outside, active, and in nature accruing the positive physical, mental health, and personal development benefits gained from time spent outside (Rigolon 2017, 73). For teens living in cities especially, parks are a form of nature they encounter daily, and these encounters can be unevenly distributed based on socio-economic and racialized status of certain neighbourhoods where disinvestment has led to poorer park provision. This can exacerbate the fact that youth marginalized by society may already be limited in the regional parks or other recreation opportunities they can access due to transportation and/or cost (Rigolon 2017, 74).

Over and over again, studies have also found that adolescent girls are less likely to use parks and other public spaces (Baran et al. 2014, 784, Dias et al. 2019, 13, Perez 2019, n.p., Lange 2021). Lloyd, Burden and Kiewa heard from girls that they perceived many neighbourhood spots as “boys’ places”, limiting their use of these facilities (Lloyd, Burden, and Kiewa 2008, 22).



The gendered use of public spaces "begins in childhood and is exacerbated in adolescence when parents tend to control their daughters' movements more tightly than their sons"

Lloyd, Burden and Kiewa (2008, 24-25)

Lloyd et al also observed that “relaxed leisure”, which places more relative importance on social relationships and connections was very important to the adolescent girls they interviewed (Lloyd, Burden, and Kiewa 2008, 25). In a recent Bloomberg CityLab article author Alexandra Lange suggests that planners and designers need to reconceptualize facilities for non-sports-based physical activity, rethink which age groups enjoy climbing and swinging, and consider what safe space for socializing looks like (Lange 2021). She also suggests that teen girls wouldn’t be the only beneficiaries; the ‘curb cut’ effect would mean that making space for girls would also amount to making space for other populations who may not be interested in the skate park or BMX track or other traditional sports provisions (Lange 2021).

The Curb-Cut Effect: “Laws and programs designed to benefit vulnerable groups, such as the disabled or people of color, often end up benefiting all of society”

Blackwell 2017

Finally, Lloyd, et al suggest that planning, design and management of parks all provide opportunities to endorse and legitimize the specific activities and experiences that adolescent girls would like to have in parks, and to correct for a potential gendered overfocus on sports-based and active leisure (Lloyd, Burden, and Kiewa 2008).

Opportunities for Planners

Teen park use should be of interest to planners as evidence shows positive associations between time spent in nature and improved mental health, reduced stress, increased social connection, and increased resilience, and because parks are squarely within municipal planning oversight and jurisdiction (Rivera et al. 2021, 2). As such, planners should be concerned with both park access and park quality.

Research has shown that although park proximity is important for park use, for the general population “park quality is a more important factor than a closer distance [in] influencing people’s use of parks” (Chen et al. 2020, 2). In qualitative studies, adolescents also expressed this; in walk-along interviews with 13-18 year-old youth, participants said they would go farther to visit a park that appealed to them (Rivera et al. 2021, 4).



Climbing Structure in Lillian To Plaza (Kocmaruk 2021)

Although parks planners and designers cannot in the course of their work, overhaul the structural conditions such as racism, overpolicing, economic inequities, or gendered discrimination that may contribute to fewer youth using parks, they are able to chip away at the role the built environment within their jurisdiction plays in perpetuating these inequities. This report suggests that two ways that planners and designers can make an impact are to:

- (1) take seriously the passive recreation needs of adolescent girls, effectively making space for them in parks; and
- (2) use quality assessments to supplement equity-based spatial analysis to improve provision in historically under-resourced neighbourhoods (the foundation of this approach is laid in the Vancouver Parks Board's 'Equity Initiative Zones' and further discussed in the Analysis section of this report).

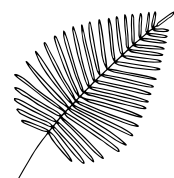


Opportunities for Appropriation (Kocmaruk 2021)

Youth Needs

Recognizing that quality can matter more than proximity and that quality impacts park use begs the question: what does quality look like in the park environment for youth? (Rigolon 2017, 73). Although what follows is a generalized discussion of the needs of adolescents 13-19, this age group is not a monolith, and there are many socio-demographic characteristics, identities, and experiences that impact and shape youth needs and the affordances they do

and do not perceive are granted by the physical environment. In particular, disability mediates relationships to the built environment in a way that this report and analysis does not address, but is recommended for further study.



Developmental Needs

Eubank Owens summarizes the key developmental tasks of youth as:

- “engaging in self-reflection and internal growth;
- managing free time effectively;
- developing satisfying social relationships; and
- developing a sense of social responsibility” (Eubank Owens 2020, 13).

Lloyd, Burden, and Kiewa, cite Rice & Dolgin (2005), who advanced a similar idea, that identity formation during adolescence is characterized by two key processes; “social-relatedness and individuation” (Lloyd, Burden, and Kiewa 2008, 22). Lieberg (1997) explicitly links these processes to the neighbourhood, suggesting that youth use the neighbourhood as the site of socialization away from parental supervision that helps them develop both individual and social identity (Lloyd, Burden, and Kiewa 2008, 22).

Whether or not the neighbourhood and public spaces such as parks successfully offer opportunities to develop individual and social identity is a question of ‘affordances’. Affordances are a conceptual framework for understanding “the perceived function of environmental features for an individual” that recognizes that the environment is made up of physical and social characteristics which together create “affordances”, or invitations, for certain actions (Gibson 1979 as cited in Eubank Owens 2020, 14, Clark & Uzzell 2006, 179).

Clark and Uzzell suggest that if an environment does not meet an individual’s needs, they will either choose a different environment, or attempt to alter their existing environment, which could point to why teens are so often perceived to be doing something disruptive in public spaces - they are attempting to change their environment to better meet their needs (Clark and Uzzell 2006, 182).



Adapted from Arlinkasari and Cushing 2018

Clark and Uzzell cite Lieberg (1995, 1997), who suggested that teens tend to create two spaces for themselves: “places of interaction and places of retreat” which reflect their developmental needs; being with others, socializing, and being a social atmosphere; and places to be alone, be in nature, to reflect (Clark and Uzzell 2006, 184, Eubank Owens 2020, 15). Researchers have since recognized that providing spaces for interaction in particular is incredibly important for encouraging park visitation as affordances for socializing are a key motivating factor for teens visiting outdoor spaces like parks (Rivera et al. 2021, Sundevall and Jansson 2020, 12). These social affordances offer youth opportunities to learn how to be together, to build their self-identity, and to implement their social skills (Eubank Owens 2020).

In her foundational chapter on youth development in the public realm, Eubank Owens poses a series of questions to planners, architects and designers to help them plan and design a public realm that meets the developmental needs of youth. These questions, like:

“[h]ow can the public realm support young people to develop satisfying relationships?” or

“[h]ow can the public realm support young people learning to manage their free time?” (Eubank Owens 2020).

were used to justify some of the supportive environmental features included in the evaluative tool (Eubank Owens 2020).

Risk-Taking

Adolescence is associated with a time of risk, often negative, anti-social, and dangerous risk-taking. It is accepted that developmentally, adolescents are drawn to seeking out risk, however more recently researchers have begun recognizing that risks in themselves are not positive or negative (Duell and Steinberg 2019, 48). Duell and Steinberg suggest that instead of being purely negative, risks exist on a “spectrum of desirability”, with positive risks being activities like trying out a new sport, making a new friend, taking a difficult class, etc. (Duell and Steinberg 2019, 48). Positive risks benefit adolescents' wellbeing, the costs associated with them are milder, and they are generally socially acceptable (Duell and Steinberg 2019, 49).

They also cite other research suggesting that greater positive risks are associated with fewer negative risks taken, which has huge implications, namely that by providing opportunities for positive risk-taking, communities may be able to stem negative risk-taking in certain teen populations (Duell and Steinberg 2019, 50).

There is plenty of literature regarding the importance of risky play for children, and a growing movement to provide more of it in play and outdoor environments for kids. Qualitative studies have also demonstrated that teens often see standard playgrounds and play provisions as being not stimulating enough, and not offering an avenue for physical challenge (Rivera et al. 2021, 4). Through recognizing that adolescent risk-taking can be both positive and negative, and that those risks can be not just physical in nature, but social as well, we can think about how parks can provide more opportunities for teens to take the positive risks that lead to increased wellbeing, and potentially reduce the likelihood of negative risks taken.



Physical and Mental Health Needs

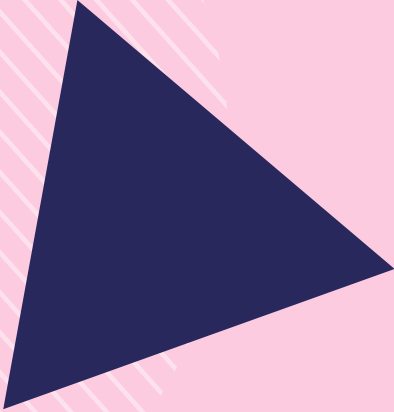
These needs are well-studied, with much research devoted to examining what environmental characteristics are positively associated with increased physical activity (contributing to better health) and with decreased levels of stress and increased resilience. For example, appropriate exercise facilities are negatively correlated with sedentary behaviour in parks, thus provision of suitable activity facilities is key to providing opportunities to accumulate physical activity (Gallo, Townshend, and Lake 2015, n.p.). Additionally, as most adolescents 12-16 walk, bike, or use other active transportation modes to arrive at parks, even if they don't engage in any physical activity once there, a trip to a park in and of itself contributes to their overall recommended hour of daily physical activity (Van Hecke et al. 2018, 159, Government of Canada 2019).





Basketball court at Riverfront Park (Kocmaruk 2021)



Basketball court at Clinton Park (Kocmaruk 2021)



"park quality matters for environmental justice-related efforts that aim to understand whether the demographic groups who need parks the most such as low-income people, persons of color, elderly populations, and youth, are appropriately served"



Rigolon and Németh (2018, 276)



**Evaluative
Tool**



Definition of Quality

Based on the literature review, the following definition of what quality means for youth park users is proposed:

A quality park environment for adolescents is one that encourages visitation, physical activity, and provides affordances for adolescent developmental tasks.

Quality Measurement

Tools for evaluating the quality of parks and greenspaces have increasingly been the subject of academic investigation since approximately the mid-2000s. Rigolon and Németh note that most tools were developed by public health scholars with a key focus on physical activity and obesity, and they often lack a specific age group focus (Rigolon and Németh 2018, 276-279). In response, Rigolon and Németh produced their own tool - the 'QUality INdex of Parks for Youth' (QUINPY). However, although this tool addressed some of the issues they identified with previous tools, the age range they selected was 0-18 and their tool measured attributes in such a generalized manner that it lacked the specificity necessary to be useful to park planners and designers wanting to improve parks for adolescents specifically.

One key success of the QUINPY tool however, was that it incorporated park features that encouraged and provided opportunities for passive recreation, not just active recreation,

thus rectifying the overfocus on childhood obesity and physical activity in prior tools (Rigolon and Németh 2018, 279). The tool presented later in this report takes this direction from Rigolon and Németh (2018) and builds on its strengths, attempting to measure how well parks meet key youth needs like socializing, which were previously ignored or deemed less important (Chen et al. 2020, 4).

Pathway at Riverfront Park (Kocmaruk 2021)



As outlined in the earlier Methodology section, the process for creating the new youth evaluative tool included a literature review, matrix, weighting and calibration. A few considerations regarding this process:

- All research included in the matrix (described below) was primary research conducted with youth. In order to include the local Vancouver perspective, data from a recent Urbanarium Young Planners engagement session was incorporated as well (Urbanarium 2021).
- The matrix was used to track study information, youth needs, park characteristics, or supportive environmental features that supported those needs as well as whether adolescent girls specifically were taken into consideration. Upon completion of the literature review, these variables were summed up; variables that only appeared in the matrix once were dropped, as were variables that were likely to have broad appeal.
- Once the final list of supportive environmental features had been completed, values were assigned to form the evaluative tool.
 - In order to correct for a historical undervaluing of facilities favoured by adolescent girls, a 1.5x multiplier was applied to these characteristics
 - Careful attention was paid to not privilege larger parks over smaller ones. As such, larger facilities such as soccer fields, skate parks, etc. were awarded a smaller point value, so that parks that had space for more than one of these facilities wouldn't automatically achieve the highest score.
 - Once the values were assigned, the tool was calibrated by scoring two local parks, and making adjustments where needed.

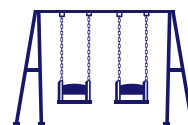
Supportive Environmental Features

As outlined in the Youth Needs section of this report, in order to provide affordances for youth to complete their developmental tasks, supportive environmental features are required. The features measured in the tool are outlined in the following section, along with a brief rationale for inclusion and the criteria used in the tool to confirm provision.

Features are organized in the following three categories:



Location



Facilities



Design

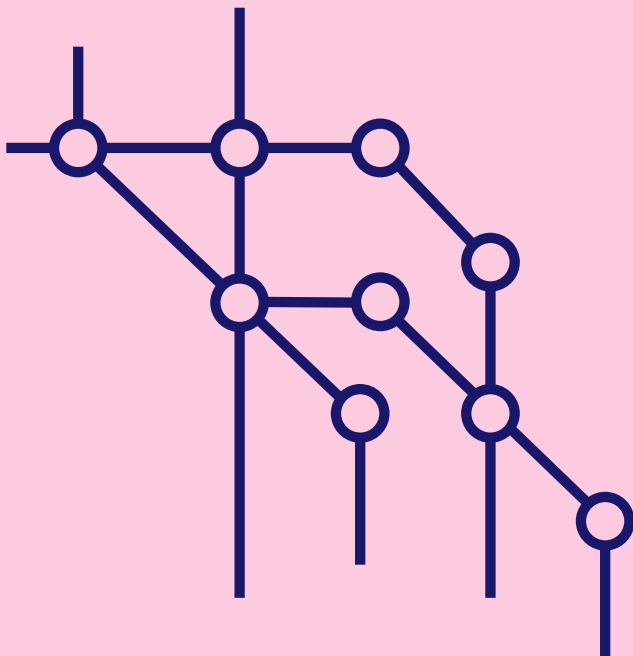


Location

PROXIMITY TO YOUTH AMENITIES

Rationale for Inclusion

When contemplating how the public realm can provide opportunities, or 'affordances' to fulfill youth's need to learn to manage their free time effectively, Eubank Owens suggests ensuring that opportunities for leisure time are co-located or proximate to other spaces where youth are already spending time (Eubank Owens 2020, 17). As such proximity to youth amenities was one of the park characteristics recorded in the tool.



Criteria

'Youth amenities' includes high schools, community centres, libraries, youth centres and youth-serving nonprofit organizations such as Neighbourhood Houses. Two levels of proximity were recorded and the following points were assigned.

- 1 point - for a park between 400-800m of a youth amenity
- 2 points - for a park within 400m of a youth amenity



Location

TRANSPORTATION INFRASTRUCTURE

Rationale for Inclusion

For adolescents most independent or peer trips to parks and other neighbourhood-level locations are taken on foot or using other forms of active transportation, as was found in a study conducted in Victoria, Australia which replicated the findings of an earlier British study (Veitch et al. 2014). Research has also demonstrated that often youth, in particular younger youth, are prevented from visiting parks unaccompanied by an adult. Parental reluctance to allow teens to travel independently is generally a reaction to perceived safety, whether it be traffic safety, stranger danger, or threat of crime (Esteban-Cornejo et al. 2016, 197).

Although safe routes to school research has primarily focused on school-aged children, some findings may also be applicable to adolescents.



Prince Edward Neighbourhood Bikeway running through Sunset Park (Kocmaruk 2021)

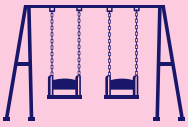
For example, statistical modeling has demonstrated that children are more likely to walk or bike to school if their parents believe that adequate active travel infrastructure is present (Brachman and Church 2019, 27). As such, it is assumed that safe active travel infrastructure surrounding parks is associated with improved parental perception of traffic safety, and thus an increased likelihood that youth will access them independently, allowing them to engage in one of their key developmental tasks, managing free time effectively.

In addition to safe active travel access, access via public transit is also believed to be important, particularly for youth who may be travelling longer distances to see friends across the city, and thus was included in the ranking criteria (Mertens et al. 2019, 8).

Criteria

A point was awarded for each of the following attributes, up to a total of 4 possible points.

- 1 point - for access to park via All Ages and Abilities (AAA) cycling infrastructure or neighbourhood bikeway
- 1 point - for access to park via TransLink's Frequent Transit Network (within 200m of stop)
- 1 point - if park is bordered by local street access only (no arterials bordering park)
- 1 point - if a marked or controlled pedestrian crossing to access park is provided



Facilities

PLAYGROUNDS & OUTDOOR FITNESS EQUIPMENT

Rationale for Inclusion

In a latent class analysis study, Mertens et al determined the relative importance of park characteristics for park visitation and park physical activity (PA) for three subgroups of adolescents (12-16) (Mertens et al.). For the 'at risk' subgroup (adolescents with overall less PA, girls, and older adolescents), playgrounds and/or outdoor fitness equipment were the second most important park characteristics.

Mertens et al. measured playground/outdoor fitness equipment in four levels. The findings in terms of adolescent preferences of these levels were that fitness equipment, either on its own, or in addition to a playground, was preferred over a playground on its own, and a playground on its own was preferred over no playground at all (Mertens et al. 4).



An example of a 'standard' playground provision (Little Tikes, 2021)

These findings suggest that the provision of play equipment was important not only to the adolescents in question, but also to specific subpopulations that may be of interest from a public health and equity perspective, such as adolescent girls. Based on the findings above, playgrounds as well as outdoor fitness equipment were awarded points in the tool.

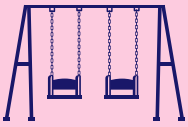
Criteria

The company PlayPower states that playgrounds designed for children 5-12 generally include slides, swings, stairways, ladders, and climbers, such as in the image below. Thus these are used as reference for determining whether a park meets the 'standard playground' provision in the ranking tool.

Outdoor fitness equipment generally consists of either fitness circuit equipment or outdoor fitness machines (Sweet et al. 104). Although there are technically varying levels of outdoor fitness equipment for specific populations (youth, adults, seniors, etc), as there was no specification in the aforementioned study by Mertens et al, and because youth-specific fitness equipment provision is not yet widespread, provision of any outdoor fitness equipment will be treated as acceptable in the ranking tool.

Points were awarded for the following features:

- 1.5 points - if a standard provision playground, with elements such as slides, stairways, ladders, etc. is provided. A 1.5 multiplier has been applied in recognition that this equipment is favoured by adolescent girls.
- 1 points - if outdoor fitness equipment is provided



Facilities

SWINGS

Rationale for Inclusion

In Van Hecke et al's systematic review of public open space attributes attractive to adolescents, one of the findings was that swings could be perceived as attractive if teens were visiting with younger siblings, or (too-small swings in particular) could be associated with a perceived (and often real) lack of age-appropriate facilities (Van Hecke et al. 2018, 170).

However, girls in particular have an affinity for swings; in Veitch and colleagues' studies, girls ranked swings of all types (from standard provision swings to adventurous 360o swings) more highly on the list of characteristics that would make them want to visit and be active in a park (Veitch et al. 2016, 6, 7). In general, observed swing usage has also been higher for girls (Van Hecke et al. 2018, 171). As such, swing provision has been included in the tool.



'Large swing at Tecumseh Park (Kocmaruk, 2021)

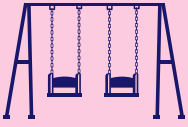


'Swing Time" installation by Howler + Yoon Architecture (Howler + Yoon, 2014)

Criteria

Swinging is often a social activity, and thus the minimum provision was considered 2 side-by-side standard size swings, which are able to accommodate adolescents. Additional points are awarded for more adventurous swing provisions, and a 1.5 multiplier has been applied to both these features as they tend to be favored by adolescent girls. Points were awarded for presence of the following types of swings, up to a maximum of 3 total points.

- 1.5 points - if at least 2 standard swings side by side are provided
- 1.5 points - if any other age-appropriate swing provision such as a 360 degree swing is provided



Facilities

ZIPLINES, SLIDES, CLIMBING EQUIPMENT

Rationale for Inclusion

Although adolescents might view a playground as an acceptable provision, there is an interest in other play equipment that affords more challenge. This sentiment was echoed in a qualitative study completed in Melbourne, Australia where participants stated that they “disliked playground equipment that was too low/not big enough and unassuming” (Rivera et al. 4). In Peter Gray’s chapter “Risky Play: Why Children Love and Need It”, he cites Sandester’s six categories of risk that are attractive to children playing: great heights; rapid speeds; dangerous tools; dangerous elements; rough and tumble; disappearing/getting lost (Gray 2020, 40-41).

In two studies conducted by Veitch et al, flying foxes (or ziplines) and larger and steeper slides were ranked among the most attractive attributes for both park visitation and physical activity (Veitch et al. 2016). This is likely as these elements afford users both a sense of speed and height, thus introducing a level of risk into the play facilities. In the same study, climbing equipment was also rated very highly, probably for similar reasons; it is moderately more risky, and provides a level of skill-building and challenge that youth users seek (Veitch et al. 2016).



'Adventure slide at Terra Nova Adventure Playground in Richmond, BC (City of Richmond, 2021)



'Climbing equipment at Tecumseh Park (Kocmaruk, 2021)

As such, ziplines, large/steep slides, and climbing equipment are all awarded points in the tool, in order to reflect adolescent interest in riskier and more challenging play equipment.

ZIPLINES, SLIDES, CLIMBING EQUIPMENT *cont.*

Criteria

A small zipline “is a pulley suspended on a cable, usually made of stainless steel, mounted on a slope” (Wikipedia). Ziplines intended for play in public spaces have a more shallow incline, and the user holds onto a handgrip (as opposed to being harnessed in), although sometimes there is a small safety strap that allows users to support themselves (Wikipedia).

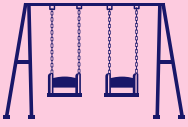
The types of slides that introduce an element of thrill and risk are steeper and taller than the average slide included as part of a standard playground, an example of such a slide is the slide in Terra Nova Adventure Playground in Richmond, BC.

Unfortunately climbing equipment is another element that is discussed in the literature but is poorly defined. Similarly to fitness equipment, there is teen-specific climbing equipment available on the market, but this has not yet become a widespread provision. In order to be able to provide points for parks that provide climbing equipment, any independent structure that provides an opportunity for climbing (apart from the ‘standard playground’ provision described above, whether that is rope-climbing, or a climbing wall, constitutes climbing equipment in this case.

In addition to the above examples of adventurous or risky play appropriate for youth, there are other possibilities for incorporating risky play into neighbourhood parks, and the tool has allowed for a point to be allocated towards any unique risky or adventurous play facility provided in a park that might appeal to youth specifically.

Points were awarded for presence of any of the following facilities, up to a maximum of 4 total points.

- 1 point -if a zipline is provided
- 1 point - if a slide with an element of increased speed or height is provided
- 1 point - if a freestanding climbing structure apart from standard playground provision is provided
- 1 point - if any other adventurous or risky play opportunity appropriate for youth is provided



Facilities

SPORTS FIELDS

Rationale for Inclusion

The latent class analysis completed by Mertens et al. found that their second subgroup, which was mostly made up of adolescent boys, assigned the most relative importance to the presence or absence of a sport field (Mertens et al. 6). In Rivera et al's qualitative study, more male adolescents mentioned the importance of sport courts for physical activity, while more female adolescents suggested that sport features were important in order to encourage social interaction (Rivera et al. 7) Rivera et al. suggest that adolescent girls may place more relative importance on 'popular' places, and the large numbers of adolescents attracted to sport features make them more attractive places to adolescent girls (Rivera et al. 7).

This is of course not intended to suggest that adolescent girls do not use sports facilities or should not be considered when planning sports facilities in parks. Expressed preference may be a result of gender-exclusive design. For example, a later design variable ('entrances to sport facilities') includes a discussion on sport facility design that may make girls feel more comfortable using these facilities. These findings all suggest that sport fields are important for adolescent park visitation while also meeting developmental needs through providing opportunities to build and maintain



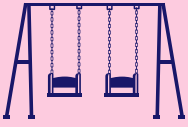
Sports Field at Clinton Park (Kocmaruk, 2021)

satisfying relationships through organized sport. As such points have been awarded for the provision of fields and sports infrastructure.

Criteria

Relative to other park characteristics, sport fields tend to be larger, and take up more park real estate. In order to ensure that the tool did not privilege larger parks, a lower point value was assigned to sport fields. Points were awarded for presence of any of the following facilities, up to a maximum of 1 total point.

- 0.5 points - if a park has a large open field (base point)
- 0.25 - if the large open field also has sports infrastructure such as soccer goalposts (per infrastructure provision, up to an additional 0.5 points)



Facilities

BASKETBALL COURTS

Rationale for Inclusion

Of the possible court sports examined in the VanPlay Inventory & Analysis (tennis, basketball, volleyball, and pickleball), the only sport facility that was mentioned in the literature review as being important to youth was basketball. In the first study, 10 key park features were identified, one of which was a basketball court, while in the second study, with a second group of youth participants, the relative importance of each of the 10 features was determined (Veitch et al. 56). Basketball courts were listed as the 7th most important features for the youth in the study.

Although there is no further strong data regarding the importance of basketball courts more broadly, this facility does seem to be important to youth in the Vancouver context, given that the Vancouver School Board maintains 77 basketball courts on their property, in comparison to the 44 maintained by the Vancouver Parks Board (Vancouver Board of Parks and Recreation 91). As such, points have been awarded in the tool for the presence of basketball facilities.

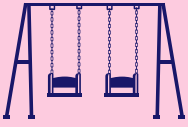


Basketball court at Pandora Park (Kocmaruk 2021)

Criteria

In this case, it is not specified whether the court provision must be a full, junior or half court. In the tool, any basketball court provision is treated as acceptable, and this amenity's weighting has been reduced in order not to privilege larger parks.

- 0.5 points - for the presence of one or more basketball courts



Facilities

BMX TRACKS/BIKE SKILLS PARK

Rationale for Inclusion

In the systematic literature review that examined public open space characteristics, it was summarized that bike tracks and BMX jumps were important to youth (Van Hecke et al. 164). Of course, bike trails and jumps are also opportunities for youth to engage in the 'rapid speeds' element of adventurous play previously noted.

In addition to BMX tracks, bike skills parks and space coming up in the literature, in the Vancouver context there was also a recent grassroots effort to introduce a similar facility to a Vancouver park. In 2020, an anonymous resident built ramps, dirt jumps and a bike course in Grays Park in East Vancouver (Johnston 2020). This grassroots effort to provide challenging biking facilities speaks to possible further demand for these types of facilities among youth in Vancouver.

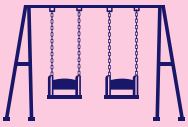


Grassroots bike jumps at Grays Park in Vancouver (Johnston 2020)

Criteria

BMX parks and other bike skills facilities and courses can be fairly large, Due to the average size of bike facilities such as these, they are grouped together with other larger facilities.

- 0.5 points - for provision of this type of biking facility



Facilities

SKATEBOARDING SPACE

Rationale for Inclusion

Skateboard facilities are some of the most commented on facilities with regards to youth use, and they are often built as part of park revitalization to attract youth, although sometimes younger youth may express discomfort visiting parks with these facilities (Perez 2019, n.p.). For example, younger youth in a study in Victoria, Australia indicated that they were less likely to visit a park that had a skate bowl and adolescent girls interviewed by Patsy Eubank Owens noted that primarily boys used the local skatepark (Veitch et al. 5, Eubanks Owens 150).

Nonetheless, in the Vancouver context, the VanPlay inventory completed in 2018 noted that skateboarding is a growing sport among youth in Vancouver with 20% of skatepark users in Vancouver being between the ages of 14-19 ¹ (Vancouver Board of Parks and Recreation 101). Based on this local context, skateboard facilities have been included in the tool.



*Skate Bowl in China Creek Park in Vancouver
(Skate Park Tour)*

Criteria

Skateparks can be fairly large and thus they are grouped together with other larger facilities and awarded a smaller point value so as not to privilege larger parks.

- 0.5 points - for provision of any type of purpose-built skateboarding facility

¹ The Vancouver Parks Board is also currently in the process of preparing a skateboard amenities strategy to meet this emerging need



Design

SOCIAL SEATING

Rationale for Inclusion

In Lloyd et al's qualitative study the authors recognized that sociability of places was important to female participants, and therefore seating and areas to socialize were one of the attributes that made sites attractive to them. The authors also suggested that seating placement should invite feelings of "intimacy, seclusion, and peace in parks" (Lloyd, Burden, and Kiewa 2008, 35). In another qualitative study where researchers conducted walk-along interviews with adolescent participants (who all happened to be female), participants expressed a similar sentiment. They told researchers that their local parks lacked places for them to sit and socialize with friends, and in particular they wanted these places to be inviting (Sundevall and Jansson 2020, 8).

Although in the literature seating is often referenced with regard to adolescent girls' needs, all youth can benefit from invitations to engage in passive socializing in the park setting, as this offers them the opportunity to develop and maintain satisfying social relationships. The UK nonprofit Make Space for Girls referenced the experiences of park planners in Sweden and Austria, who realized that bench provisions were often not sufficiently inviting for socializing; in order to face one another comfortably,



An example of ideal social seating (Make Space for Girls, 2021)

one person would have to sit on the ground (Make Space for Girls 2021).

They also noted that often park seating was provided facing sports facilities, which can suggest that socializing is a secondary activity to active leisure (Make Space for Girls 2021).

Criteria

In order to invite comfortable socializing, seating must allow youth to sit face to face, meaning that benches are not awarded any points in this tool. Based on the above findings, and the importance of seating for adolescent girls, a 1.5 multiplier has been applied to seating provisions. Points were awarded for the presence of features that provide for the following, up to a maximum of 3 total points.

- 1.5 points - for provision of social seating for 2 people
- 1.5 points - for provision of social seating for more than 2 people



Design

INDICATION THAT YOUTH ARE WELCOME

Rationale for Inclusion

In Patsy Eubank Owens' chapter "A Fundamental Need: Linking Youth Development to the Public Realm" Owens suggests that in order to provide opportunities for youth to develop a sense of social responsibility, a public realm that reflects them and makes them feel welcome is required to counteract messaging that youth often receive regarding whether or not they are welcome in public spaces (Eubank Owens 2020, 18)²

Criteria

Recognizing that it is a challenge to provide dedicated and permanent space for any one population in a public space such as a park, value was attributed to any park feature that could signal to youth users that although a space is not entirely theirs, they are welcome in it. In the park ranking tool, a point is awarded to any park feature, such as a mural, or other invitation that achieves this.

- 1 point - for inclusion of a visible element that signals that youth are welcome



Examples of teen murals (Teen Bubbler, 2021)

² *t is important to note here, that visuals indications cannot change the socio-political milieu in which youth use public space, which can and does result in youth of varying identities and experiences continuing to feel unwelcome and being policed in space.*



Design

DESIGN ELEMENTS USED TO SUBDIVIDE SPACE & SPORTS ENCLOSURES

Rationale for Inclusion

The book *Invisible Women* by Caroline Criado Perez cites research completed in Vienna as long ago as the mid-90s which sought to investigate why park usage for girls over the age of 10 dropped significantly, found that large open spaces “forced girls to compete with the boys for space” (Perez 2019, n.p.). To address this issue, they subdivided parks into smaller spaces, so girls could feel more comfortable taking over a space of their own, and this successfully addressed the issue (Perez 2019, n.p.).

The aforementioned Swedish qualitative study that incidentally ended up with all-female adolescent participants also emphasized the importance of smaller spaces, although not explicitly to avoid gender conflicts but to make girls feel more comfortable. Girls in this study wanted greenery to be used to effectively divide the park into different rooms to “to create different moods with more lively and quiet parts” as well as to separate hanging out spaces from children’s playspaces (Sundevall and Jansson 2020, 10, 8).

For the same reason that girls may not feel comfortable accessing large open spaces (not wanting to compete with boys) they may also

avoid using sports facilities where there is only one small entrance. As cited in *Invisible Women* Viennese park planners tackled this problem by introducing wider entrances to sports facilities (Perez 2019, n.p.).

Criteria

Unfortunately, none of the research cited provides sample dimensions of the ideal size of one of the subdivided spaces referenced. As such, this park characteristic was evaluated based on the use of pathways, terrain, and landscaping elements to create distinct areas of the park with visual separation from one another. As this design characteristic is important to girls a 1.5 multiplier was applied.

No further information was available regarding the ideal size of entrances to sports facilities. Given that enclosures appear to be problematic, no enclosure was treated as the preferred provision, and sports facilities with a wider than normal provision were awarded slightly less points. Both of these levels received a 1.5 multiplier as this design consideration is favored by girls.³

The maximum amount of points possible in this area is 3, as sports enclosures are treated as levels of provision.

- 1.5 points - if design elements and landscaping are used to subdivide park space and create visual barriers between different areas of the park
- 0.75 points - if sports facilities have a wider than standard enclosure
- 1.5 points - if sports facilities have no enclosure

³ If a park has no sports infrastructure (soccer, basketball, baseball), the points associated with enclosures should be removed from the total possible points for that park in order not to skew the results.



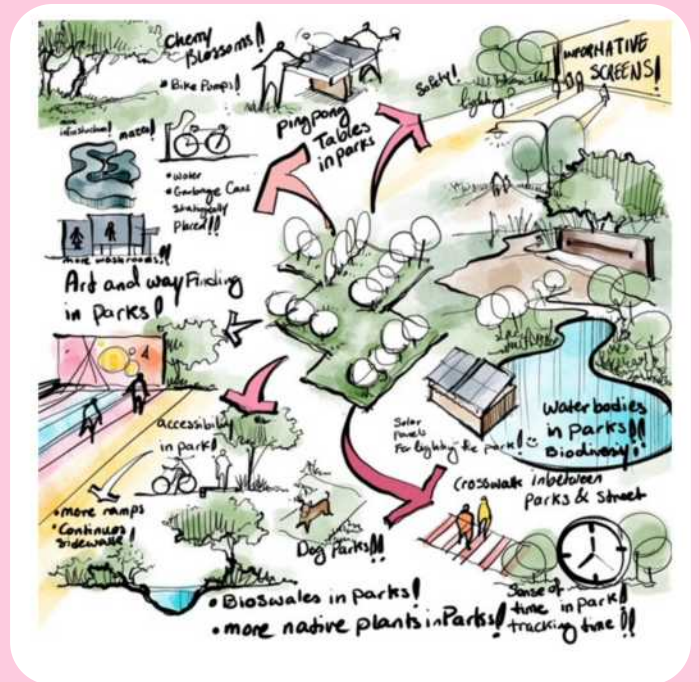
Design

LIGHTING

Rationale for Inclusion

Swedish park planners, when trying to plan a gender-inclusive youth park, collected data on girls' park usage, which demonstrated that lightning made their respondents feel safer in parks (Perez 2019, n.p.). Girls interviewed by Sundevall and Jansson also proposed lighting as a solution to feeling unsafe in the park, a sentiment that was confirmed by the systematic literature review conducted by Van Hecke et al. in 2018.

Although youth report that lack of or inoperable lights made them feel unsafe in parks, quantitative studies have not yet examined whether lighting affects park visitation (Van Hecke et al. 2018, 168). In the Vancouver context, participants at the Urbanarium Young Planners event made sure to include lighting in both their 'Neighbourhood Park' and 'Greenway' scenarios (Urbanarium 2021). As such, lighting has been included in the tool.



Neighbourhood Park scenario (Urbanarium 2021, illustrated by Neda, Hema)

Criteria

Lighting considered when assigning points includes both street lighting proximate to the park and dedicated park lighting. As this is a characteristic that was specifically cited by girls, a 1.5 multiplier has been applied. The first level of points is awarded for some lighting (usually street lamp lighting), and the maximum points are awarded where some pathways and social areas of the park are lit.

- 0.75 points - if some lighting is available through a combination of street lighting and park lighting
- 1.5 points - if park is well-lit, with pathways, activity areas including social areas lit



Design

OPPORTUNITIES FOR APPROPRIATION

Rationale for Inclusion

While the aforementioned characteristics were ones that have been examined by qualitative and quantitative research done by planners, policy analysts, and public health professionals, there are other attributes that surfaced in the literature review where the explicit linkage between visitation has not yet been drawn, for example: opportunities to appropriate space in parks.

A thesis completed by Fatemeh Saeidi-Rizi suggested that in planning public spaces for teens, designers should focus on the marginal spaces, near entrances, exits, and parking lots (Saeidi-Rizi 2014, 87). This author also noted that teens often didn't use space as intended, rather how they wanted to use it (Saeidi-Rizi 2014, 57). This is in line with another thesis written by Ella Ver that suggests that teens may be drawn to opportunities to appropriate space for their own needs, as a means of exerting sovereignty and aiding in identity formation (Ver 2014, 11). Ver goes so far as to suggest that "it is increasingly necessary for planners, policy makers, and urban designers to identify and enable spontaneity and appropriation by recognizing the legitimacy and importance of appropriated spaces and by preserving and allowing such processes to occur" (Ver 2014, 39).

An example of this type of appropriation was included in Saeidi-Rizi's thesis, of teens using a baseball diamond fence as a climbing structure (Saeidi-Rizi 2014, 60). This photograph also illustrates another anecdotal observation made by Saeidi-Rizi that rings true; that youth seem to enjoy having a high-up vantage point from which they can observe others, and perhaps even be observed.



Example of teens appropriating space (Saeidi-Rizi, 2014, 60)

Criteria

As such, in the tool, consideration is given towards a (highly subjective) assessment of opportunities for appropriation of marginal spaces, or spaces whether there is opportunity to achieve a vantage point, while also being highly visible to other park users (for example stairs).

- 1 point - for provision of spaces with characteristics that youth may be drawn to: a vantage point, the opportunity to be seen, and that are marginal in nature.


This tool measures the quality of parks for youth 13-19 in the following categories, based on previously outlined criteria which determines how points are allocated.



symbol denotes features where a 1.5x multiplier has been applied.

Category	Supportive Environmental Features	Total Possible Points
Location	Proximity to Youth Amenities	2
	Transportation Infrastructure	4
Facilities	Playgrounds & Outdoor Fitness Equipment	2.5
	Swings	3
	Ziplines, Slides, Climbing Equipment	4
	Sports Fields	1
	Basketball Courts	0.5
	BMX Tracks/Bike Skills Park	0.5
	Skateboarding Space	0.5
Design	Social Seating	3
	Indication that Youth Are Welcome	1
	Design Elements Used to Subdivide Space & Sports Enclosures	3
	Lighting	1.5
	Opportunities for Appropriation	1
	Total	27.5

Youth Evaluative Tool (Kocmaruk, 2021)



“park quality is a more important factor than a closer distance [in] influencing people’s use of parks”

Chen et al. (2020, 2)

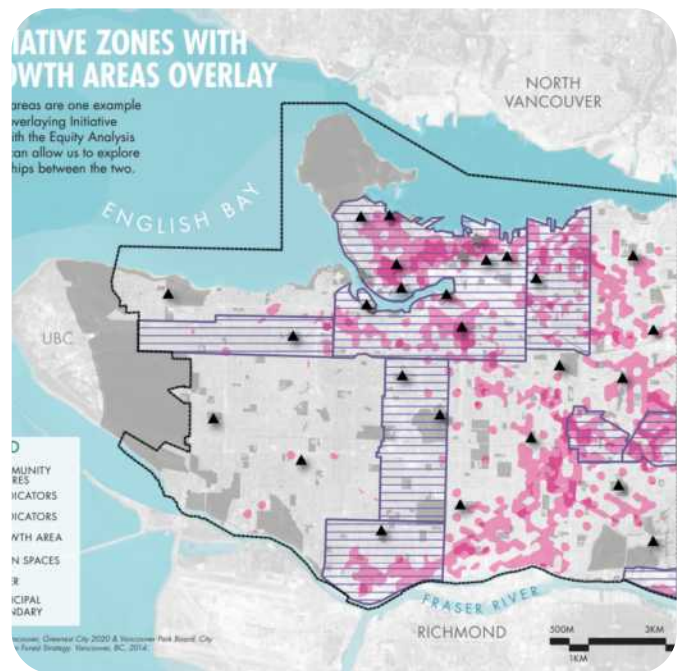
Case Study

Vancouver Planning Context

Planning for youth in Metro Vancouver follows the trends outlined in the Background section, with municipal uptake varying from no youth-specific plans or strategies, to the City of North Vancouver's 'Child, Youth + Family Friendly Strategy' which covers community engagement, community spaces, housing, program design and delivery, and community partnerships (City of North Vancouver 2016). The City of Vancouver has focused on youth engagement and youth program delivery, but less so on robust planning for adolescents in the public sphere, including parks.

The Vancouver Parks Board, which retains jurisdiction over Vancouver's parks recently approved VanPlay: Vancouver's Parks and Recreation Services Master Plan, which is forward-thinking in its treatment of equity and investment. In terms of planning for youth, VanPlay mostly focuses on youth-friendly spaces and programming in community centres, however one of the actions in the asset targets section is to "establish design and performance criteria for play spaces" for all ages (Vancouver Board of Parks and Recreation 2019, 74).

Elsewhere, the City of San Diego, California is experiencing increasing development pressures, not unlike those facing Vancouver and other Metro area municipalities, where increasing land costs are making acquiring additional park space more challenging.



VanPlay Equity Initiative Zones with Growth Area overlay (Vancouver Parks Board, 2019)

In response, park planners in the City of San Diego have switched from a land-based standard to a recreational value-based standard to assess park provision (City of San Diego 2021). This park standard (based on park acres, amenities, access and activation) awards a certain number of points to each park, which allows it to serve 100 people per point (City of San Diego 2021). This kind of quality-focused park assessment could be the next trend in park planning in rapidly densifying cities.

Parks planners in Vancouver have focused more on access and less on quality in the past (Vancouver Board of Parks and Recreation 2018, 40). Although in Vancouver, 99% of residents have access to greenspace within a 10 min walk, the quality of those greenspaces is variable (Vancouver Boards of Parks and Recreation 2018). And while Vancouverites enjoy well-distributed parkspace, the city's per capita parkspace provision pales in comparison to similarly sized, although much less dense Canadian cities (Park People 2021). As the city continues to densify, quality measurements may become more important in order to support more intensive park use. The final portion of this report represents a framework for a quality-based analysis of parks for a specific subpopulation - youth 13-19.

City	Park Area per Capita (ha)
Edmonton	6.2
Surrey	5.0
Quebec City	4.3
Winnipeg	4.2
Toronto	2.7
Vancouver	2.1

Park area per capita, adapted from (Park People, 2021)

Park Use

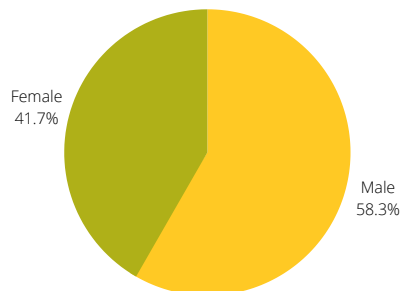
6.1%

Percentage of teen users 13-20 observed in Vancouver parks during SOPARC study

7.3%

Percentage of teens 13-20 in Vancouver, estimated based on 2016 Census

Breakdown of gender of observed adolescent users in Vancouver SOPARC study



A study of park use in Vancouver completed in 2017 using the System for Observing Play and Recreation (SOPARC) selected a sample of 24 Community, Neighbourhood, and Local parks in which to observe use. The number of total park users was 18,285, and adolescents (13-20) represented 6.1% (1,122) of total park users; 468 females and 654 males, (Urban Design for Health and Vancouver Board of Parks & Recreation 2017, 14).⁴ It was estimated that teens 13-20 make up approximately 7.3% of Vancouver's total population, meaning that teen users were slightly underrepresented in the SOPARC study (Statistics Canada 2017).

⁴ The age range used by the SOPARC study was 13-20, while StatsCan reports ages in 5-year increments (10-14, 15-19, 20-25). In order to produce an estimate, an assumption was made that the population within each 5 year increment is equally distributed between each age.

There was an observed difference between the number of adolescent girls and boys in parks: 41.7% to 58.3% respectively (Urban Design for Health and Vancouver Board of Parks & Recreation 2017,14). There was also a very small difference (1.6%) in the percentage of adolescent boys engaged in moderate or vigorous physical activity in parks as compared to adolescent girls (Urban Design for Health and Vancouver Board of Parks & Recreation 2017, 15). Based on this study, there are certain parks in the system that appear to be meeting adolescent needs; drawing a proportionate number of adolescents when compared to the

census tracts that surround them. However, there were certain parks in the sample where no adolescents were observed at all, for example East Fraserlands Park, Eburne Park, and Foster Park. There is also an opportunity to apply a gender lens to better understand why fewer adolescent girls were observed in Vancouver parks.

Analysis

The intention of the following analysis is to demonstrate the applicability of the evaluative tool, and to investigate the following questions in the Vancouver context:

- Are otherwise 'good' parks also good for youth?
- Where is investment needed outside of Vancouver's 'Growth Areas' to meet youth needs?

The park sample (n=10) was chosen based on the following:

- **VanPlay classifications** - 4 'Neighbourhood', 4 'Local' and 2 'Urban Plaza' parks were selected in total based on the size classifications in VanPlay (all smaller than 10 hectares, full classification table available in Appendix)

- **Previous quality measurement** - In the summer of 2020, Justin McElroy evaluated every park in Vancouver on a 40-point scale, with an equal number of points allocated for each of the following categories: 'Kids', 'Adults', 'Design' and 'X-factor' (McElroy 2020). 5 Neighbourhood, Local, and Urban Plaza parks that scored in the upper quartile were selected.
- **Location** - Additionally, 5 parks were selected based on their location, either within or proximate to areas identified in VanPlay as having two or more overlapping indicators of need (Equity Initiative Zones). These 5 parks were also outside of the Vancouver Growth Areas identified in VanPlay.

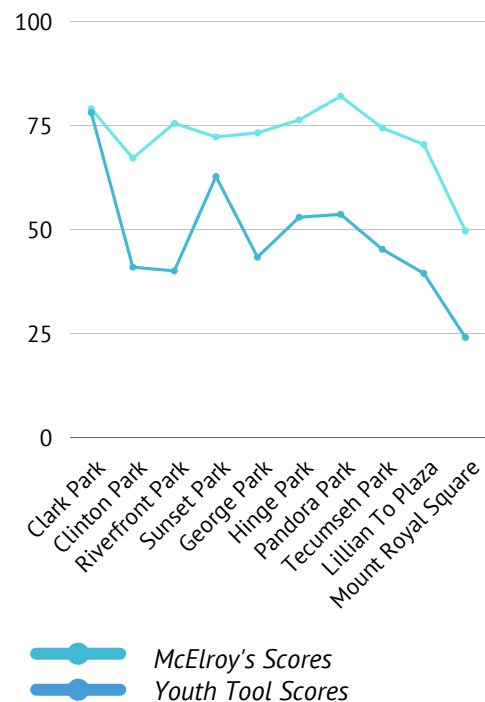
Park Ranking

Rank in Youth Tool	Park Name	Normalized Score	Park Classification
1	Clark Park	78.1	Neighbourhood
2	Sunset Park	62.7	Neighbourhood
3	Pandora Park	53.6	Local
4	Hinge Park	52.9	Local
5	Tecumseh Park	45.2	Local
6	George Park	43.3	Local
7	Clinton Park	40.9	Neighbourhood
8	Riverfront Park	40.0	Neighbourhood
9	Lillian To Plaza	39.4	Urban Plaza
10	Mount Royal Square	24.0	Urban Plaza

Park rankings according to youth tool (Kocmaruk, 2021)

Overview of Scores

The initial section provides a comparison of scores obtained through the youth evaluative tool and McElroy's scores. In order to be able to compare the two sets of scores, they have both been normalized. The full score-breakdown for all parks evaluated with the youth tool is included for reference in the Appendix.⁵



⁵ There are some parks where there are no sports facilities provided, as such, the total possible points for these parks was adjusted so that they did not lose points for the Design characteristic 'sports facilities have no enclosure'.

The range of scores attained through use of the youth evaluative tool was between 24 and 78.1, with a median score of 44.3 (n=10). In comparison, the range of McElroy’s scores for the same group of park classifications (n=218) was between 8.8 and 82.2, with a median score of 55.9 (McElroy 2020).

Are otherwise good parks also good for youth?

A correlation coefficient was calculated for the two scores assigned to the sample of parks (n=10) to attempt to determine whether there was a relationship between the evaluations, i.e. does a score in McElroy’s ranking predict a score in this evaluative tool. The correlation coefficient for this group was 0.704, which is technically statistically significant at the 0.05 level. Although this was not a randomized sample of parks, there isn’t a strong reason to believe that this sample is substantially different from the broader group of parks of the same classification. As such, we can assume that there is likely a relationship between McElroy’s scores and those given using the youth evaluative tool; parks are likely to score substantially less in the youth tool.

Park Classification	Average Difference Between Normalized Scores
Neighbourhood	18.0
Local	27.7
Urban Plaza	28.3

Average difference between McElroy & youth scores by park classification (McElroy, 2020, Kocmaruk, 2021)

This echoes what was ascertained through the literature review; there is significant overlap between the park needs of different age groups, but that in Vancouver there are some specific youth needs that are not currently being provided for, even in otherwise ‘good’ parks, which may explain the lag between McElroy’s scores and the ones assigned using the youth tool. For example, Pandora Park scored well in McElroy’s tool (82.0), while its youth score was 53.6. Although this was still a good score relative to the rest of the sample, it leaves something to be desired. The lag was less in Neighbourhood parks, where the average difference between the two scores was 18 points (as opposed to 27.7 and 28.3 for Local and Urban Plaza parks respectively, n=10).

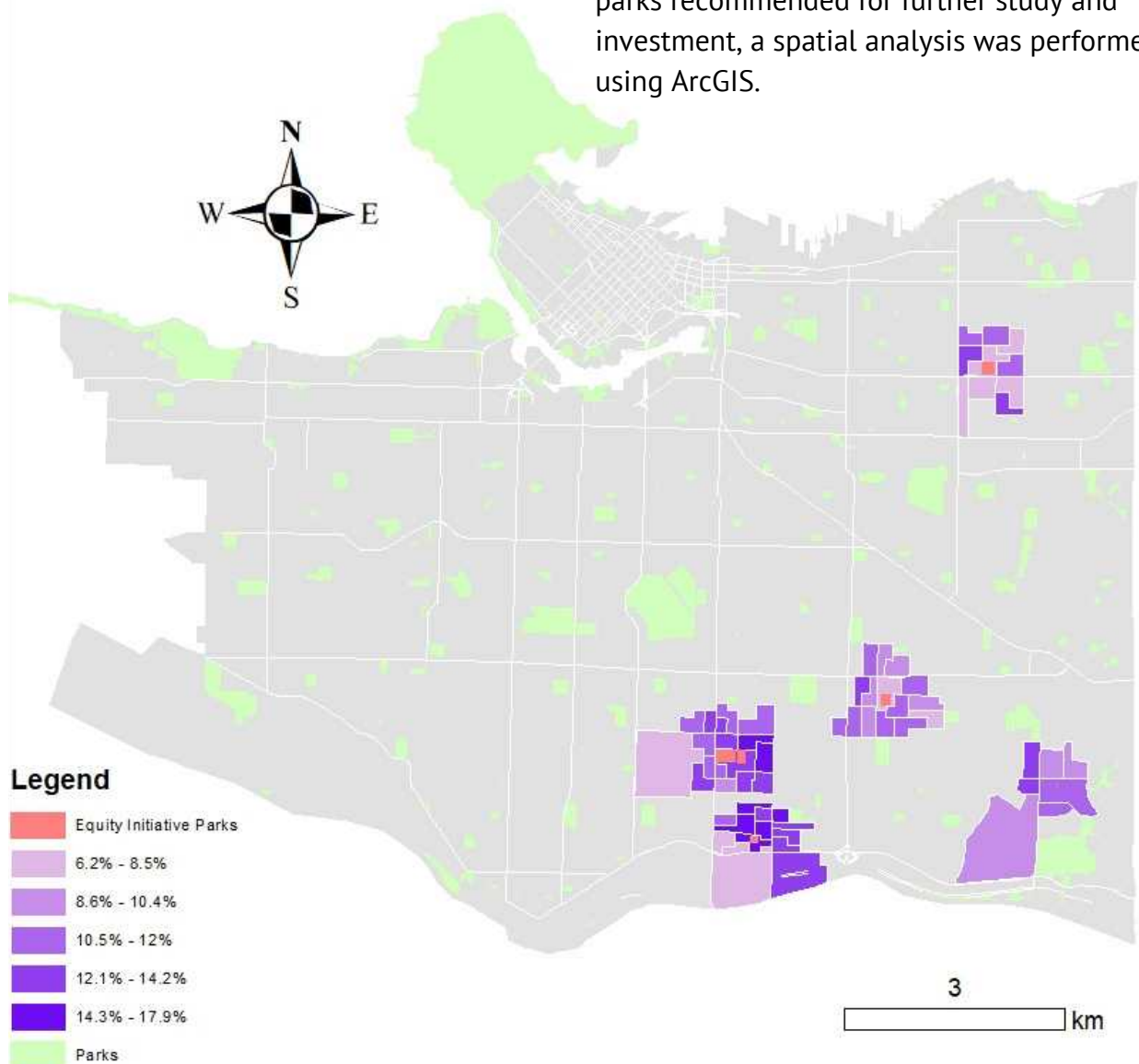
What this means is that ‘good’ Neighbourhood parks are more likely to be attractive to youth than ‘good’ parks of other classifications. However, there are still cases where Neighbourhood parks, despite their size, scored poorly, for example Riverfront Park scored 75.5 in McElroy’s tool, and 40 in the youth tool. In this case, points were lost primarily due to lack of play equipment, proximity, and road infrastructure surrounding the park. These aspects were not part of McElroy’s scoring, which demonstrates the importance of measuring quality for specific user groups, for whom proximity and traffic safety might matter more than for others. In summary, ‘good’ parks are less suitable for youth users, although Neighbourhood Parks are more likely to be attractive to youth than other park classifications.

Where is investment needed outside of Vancouver's 'Growth Areas'?

One of the three bold moves set out in VanPlay are the 'Equity Initiative Zones', which are made up of composite maps of three variables: park access gaps, demand for low-barrier recreation, and urban forest canopy gaps (Vancouver Board of Parks and Recreation 2019, 20). These zones are intended to highlight where resources should be allocated to alleviate inequities. Additionally, VanPlay identified the current 'Growth Areas' where larger scale development

processes are ongoing and Community Amenity Charges and Development Cost Levies will be used to improve public amenities in the near future (Vancouver Board of Parks and Recreation 2019, 36).

The five parks included in the sample were selected because they were within or proximate to Equity Initiative Zones and were outside of the identified Growth Areas. Of these parks, only one scored above 50.0 points (62.7, Sunset Park), the remainder scored 45.2 (Tecumseh Park), 43.3 (George Park), 40.9 (Clinton Park), and 24.0 (Mount Royal Square). In order to determine the priority level of poorly-scoring parks recommended for further study and investment, a spatial analysis was performed using ArcGIS.

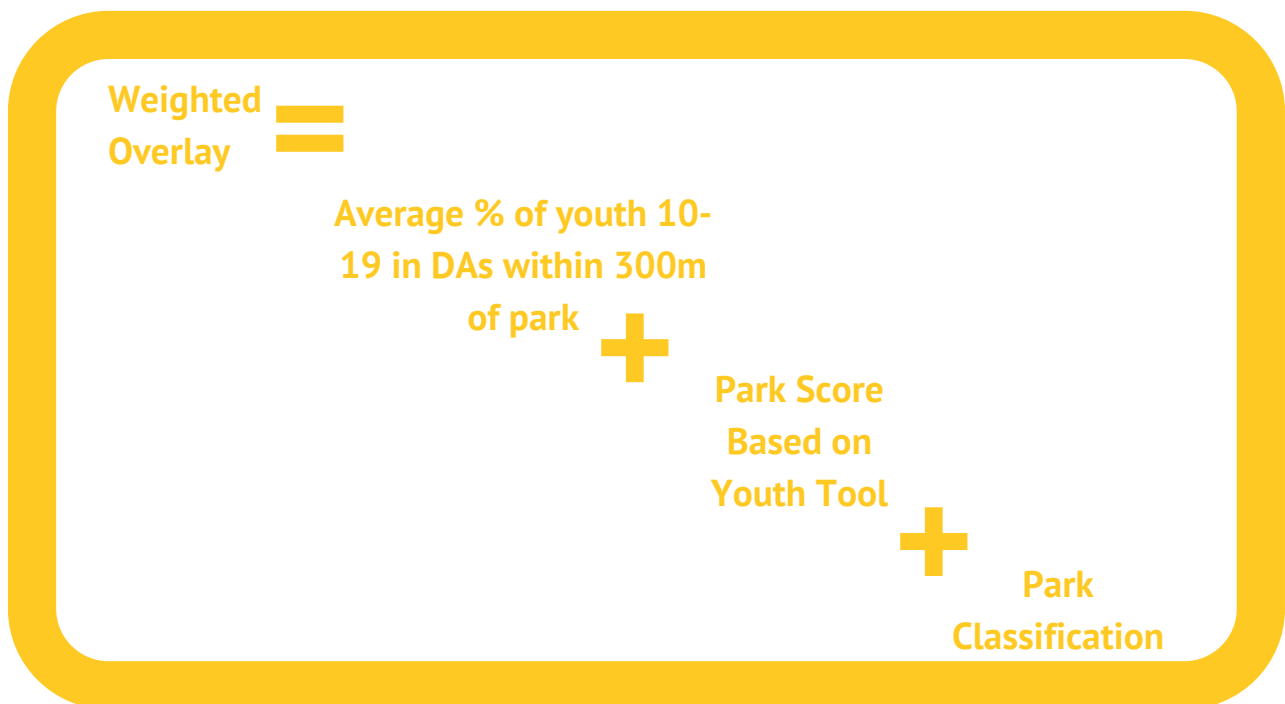


Percentages of youth 10-19 in DAs within 300m of selected parks in Equity Initiative Zones (StatsCan, 2017, City of Vancouver, 2021, Kocmaruk, 2021)

This spatial analysis took three factors into account when determining prioritization for further study and investment; the average percentage of youth 10-19⁶ in the surrounding neighbourhood, the park score, and the park classification. First, Census dissemination areas (DAs) within 300m of the five parks were identified, and the average percentage of youth 10-19 in those DAs was recorded. Then three rasters were created and reclassified; the average percentage of youth 10-19 within 300m of the park; the park score based on the youth tool; and the park classification. These three reclassified rasters were used to create a weighted overlay. Both the percentage of youth 10-19 in the area and the park score were given a weighting of '2', while the park classification was given a weighting of '1'. In priority order, the following parks should receive attention in order to better serve the youth populations in their immediate vicinity:

1. George Park
2. Mount Royal Plaza
3. Sunset Park
4. Clinton Park
5. Tecumseh Park

This kind of spatial analysis is an example of how a quality measurement tool can be integrated into existing equity frameworks, as well as used as a factor in spatial analysis to aid in decision-making.



⁶ Although this report has focused on youth 13-19, StatsCan data availability required this analysis to include ages 10-19

Additional Findings

The weighting applied to characteristics such as swings, that were deemed important to adolescent girls in the literature, was an attempt to rectify the historical gender imbalance in design and planning of parks and public spaces. In the Vancouver case study, the two highest scoring parks with regards to these characteristics were Sunset Park and Tecumseh Park, in part due to their swing provisions. However, the provisions of the standard facilities (like social seating) measured in this tool only scratch the surface of park and public space design possibilities that address the needs of users that want to engage in more social, passive recreation. In most of the parks that were evaluated, the ‘social seating’ amounted to a picnic table with bench seating. There are many more creative and inviting social seating designs that could be explored (for example, the current social seating provision in Pandora Park). Some further examples of social seating and passive recreation facilities illustrated by the UK nonprofit ‘Make Space for Girls’ are included in the Appendix.

Throughout the park visits, it was noted that adventurous elements appropriate for children were present in some newer parks, such as Hinge Park, however adventurous elements appropriate for teen users were much less common. It is recommended that adventurous play for teens in addition to children be considered in future park planning in the city, possibly in the form of a destination adventure park.

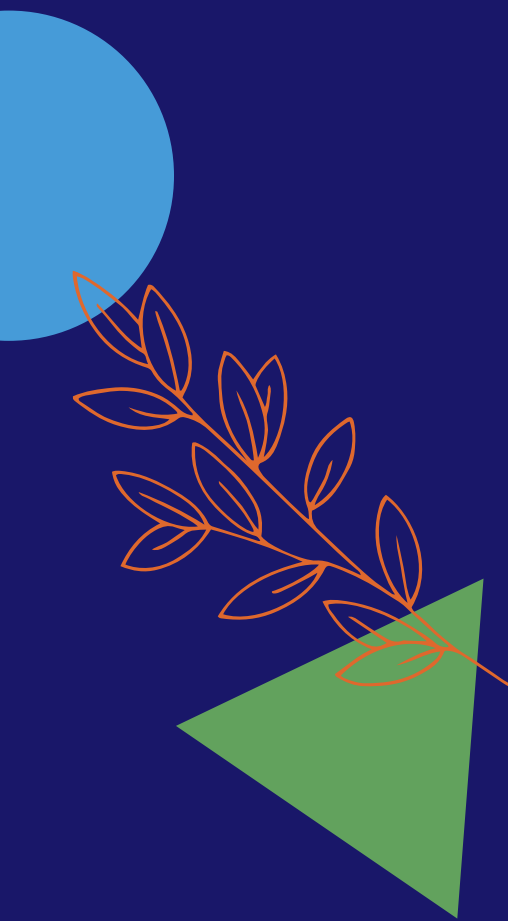
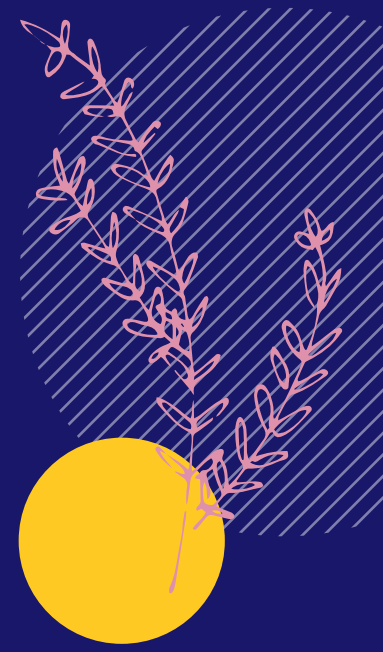
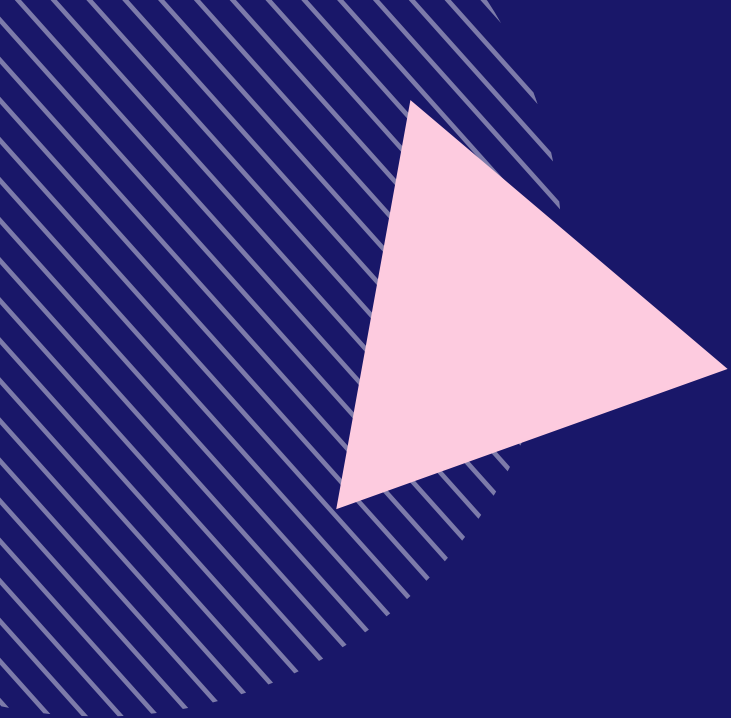
The tool attempted not to privilege larger parks over smaller ones, however both Urban Plazas evaluated both scored very poorly, both in the



Social seating provision in Pandora Park (Kocmaruk, 2021)

facilities and design elements categories. This points to the need to further examine how the findings from the literature review can be translated to plaza design, particularly as these plazas take up less space, and can be placed in convenient locations proximate to other amenities, and cycling/public transit networks, which are both important for youth independent use.

Finally, no park evaluated received a point for ‘visible indication that youth are welcome in the space’. This is something that should be considered in consultation with local youth, to determine what type of indication might help with assuring them that they are welcome in parks and public spaces.



Conclusion



Limitations & Future Study

- **Primary Research & Consultation** - Although studies reviewed to determine park characteristics important to youth included primary qualitative or quantitative research, new primary research was beyond the scope of this report. As such, calibration of the tool through consultation with youth in whatever local context it is being used is imperative.
- **Equity Lenses** - Additional equity lenses on top of the gender lens are required, such as a focused understanding of the park needs and preferences of racially and socio-economically marginalized youth as well as disabled youth. This should be completed through an additional literature review.
- **Gender-Diversity** - The gender lens used in this analysis employs the gender binary that appears in academic research on the subject. The experiences and preferences of gender-diverse youth were thus not taken into consideration. Further research in this area is required, especially as the Vancouver Parks Board has committed to being inclusive of gender diverse patrons in their work.
- **Older Youth** - Based on the peer-reviewed research available, the literature review skewed towards the preferences of younger youth (13-16, and sometimes even 12-16). The perspectives of older youth mostly came through qualitative studies. As such, further research and consultation is recommended to better capture the needs and preferences of older youth.
- **Amenity Layout** - Although many studies have investigated park characteristics attractive to youth, the layout of these characteristics has been less studied - for example, should youth exercise and activity facilities be set apart from children's play provisions? And if so, by how much? Additionally, further research is required into teen preferences for 'marginal spaces', such as stairs, park edges, and how designers can ensure that such spaces are provided.

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Appendix

Classification	Size (ha)
Destination	> 20.0 ha
Community	10.0-20.0 ha
Neighbourhood	2.5 -10 ha
Local	0.4 -2.5 ha
Urban Plaza	< 0.4 ha

*Park Classification Table
(Adapted from VanPlay, 2018)*



*Hammock seating
(Make Space for Girls, 2021)*



Performance space (Make Space for Girls, 2021)



*Social recumbent bikes
(Make Space for Girls, 2021)*

Supportive Environmental Features		Possible Points	Clark Park	Riverfront Park	Sunset Park	Clinton Park	Mount Royal Square	George Park	Tecumseh Park	Hinge Park	Lillian To Plaza	Pandora Park
		Classification	Neighbourhood	Neighbourhood	Neighbourhood	Neighbourhood	Plaza	Local	Local	Local	Plaza	Local
Location	Proximity to Other Youth Spaces - Levels	2	2	0	2	1	2	1	0	2	1	2
	Park within 400-800m of high schools, community centres, libraries, youth centres and nonprofits, and faith-based centres	1										
	Park within 400m of high schools, community centres, libraries, youth centres and nonprofits	2	2	-	2	1	2	1	-	2	1	2
	Road Infrastructure - Multiple points	4	4	2	2	2	1	2	1	3	3	3
	Access via AAA cycling infrastructure or neighbourhood bikeway	1	1	1	1	1	-	-	-	1	1	1
	Access via TransLink's Frequent Transit Network (within 200m)	1	1	-	-	-	-	1	-	-	1	1
	Only local street access (no arterial streets bordering park)	1	1	-	-	-	1	1	1	1	1	-
	Marked or controlled pedestrian crossing present	1	1	1	1	1	-	-	-	1	0	1
Facilities	Play Equipment - Multiple points	9.5	5	1.5	5.5	3	-	3	6.5	2.5	2.5	1.5
	Typical playground	1.5	1.5	1.5	1.5	1.5	-	1.5	1.5	-	-	1.5
	Outdoor fitness equipment	1	1	-	-	-	-	-	-	-	-	-
	Appropriately sized swings present (at least 2 swings side-by side)	1.5	1.5	-	1.5	1.5	-	1.5	1.5	1.5	-	-
	Other swings (adventurous or swings where more than one user can swing at a time)	1.5	-	-	1.5	-	-	-	1.5	-	1.5	-
	Zipline	1	1	-	-	-	-	-	1	-	-	-
	Large/steep slide	1	-	-	-	-	-	-	-	-	-	-
	Climbing equipment	1	-	-	1	-	-	-	1	1	1	-
	Other adventurous/risky play opportunities	1	-	-	-	-	-	-	-	-	-	-
	Larger Facilities - Multiple points	2.5	1	0.5	1.5	1.5	-	0.5	0.5	-	-	0.5
	Open field	0.5	0.5	-	0.5	0.5	-	0.5	0.5	-	-	-
	Sport infrastructure (soccer, baseball, etc) 0.25 points each up to a maximum of an additional 0.5 points	0.5	-	-	0.5	0.5	-	-	-	-	-	-
	Basketball courts	0.5	0.5	0.5	0.5	0.5	-	-	-	-	-	0.5
	BMX tracks/Bike skills park	0.5	-	-	-	-	-	-	-	-	-	-
	Skateboarding space	0.5	-	-	-	-	-	-	-	-	-	-
Design - Multiple Points & Levels	9.5	7.75	7	6.25	3.75	3.25	4.75	3.75	6.25	3.75	7.75	
Social seating - 2 individuals can sit facing one another	1.5	1.5	-	-	-	-	-	-	1.5	1.5	1.5	
Social seating - a group of individuals can sit together and socialize	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	-	1.5	
Visible indication that youth are welcome in the space (mural, etc.)	1	-	-	-	-	-	-	-	-	-	-	
Design elements are used to divide park into smaller spaces	1.5	1.5	1.5	1.5	-	-	1.5	1.5	1.5	1.5	1.5	
Sport courts/fields where there is an enclosure, it is wider than the standard provision	0.75											
Sport courts/fields have no enclosure	1.5	1.5	1.5	1.5	1.5	-	-	-	-	-	1.5	
Some lighting is available (street lighting, some lighting in park)	0.75											
Well-lit (pathways, social and activity areas lit)	1.5	0.75	1.5	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	
Opportunities for Appropriation	1	1	1	1	-	1	1	-	1	0	1	
TOTAL	27.5	19.75	11	17.25	11.25	6.25	11.25	11.75	13.75	10.25	14.75	
Percentage	100%	71.82%	40.0%	62.7%	40.9%	24.0%	43.3%	45.2%	52.9%	39.4%	53.6%	

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