SUB-REPORT

TRANSPORTATION PLANNING PRACTICES, PROCESSES & INITIATIVES AT UBC

Produced by Audrey Choong

UC3 University Climate Change Coalition

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While conducted under the mentorship of UBC Sustainability Hub and Campus + Community Planning staff, the opinions in this sub-report, as well as any errors, are those of the author and do not necessarily reflect the views of the University of British Columbia.

The work was created on the unceded lands of thesḵwx̱wú7mesh (Squamish), xʷməθkʷəy̓əm (Musqueam), and sel̓íl̓witulh (Tsleil-Waututh) peoples.

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INTRODUCTION

Transportation in the Metro Vancouver region is the single largest source of greenhouse gas emissions, and the second highest category of emissions at the University of British Columbia (UBC).

These are core issues for UBC, which has targeted a 45% reduction in commuting emissions over this decade in Climate Action Plan 2030 (CAP 2030). UBC is also in the midst of developing Campus Vision 2050 to guide campus land use planning for the next 3 decades. Additionally, the UBC Neighbourhood Climate Action Plan (NCAP) is in progress, to address both mitigation and adaptation strategies for reducing carbon emissions in residential neighbourhoods on the Point Grey campus. A growing campus community would hence benefit from the active and meaningful integration of climate justice considerations into planning work, particularly in the transportation sector.

PRODUCED IN CORRELATION WITH THE POLICY BRIEF ON CLIMATE JUSTICE IN TRANSPORTATION PLANNING,

This sub-report intends to act as a comprehensive account of past, current and emerging practices, processes and initiatives within transportation planning at UBC. The sub-report also seeks to explore, at a preliminary level, the ways and extent to which climate justice considerations have been embodied in UBC transportation planning. It will:

- Introduce key context for transportation planning at UBC.
- Discuss the profile of transportation users at UBC, including the identification of key equity-seeking groups.
- Outline key documents and strategic plans governing current processes and practices of transportation planning at UBC, as well as emerging directions for planning.
- Provide a preliminary assessment of the extent to which current transportation planning goals, projects and outcomes address climate justice considerations.

CONTEXT & HISTORY FOR TRANSPORTATION PLANNING

Contextual Challenges to Transportation Accessibility

As discussed in the Policy Brief on Climate Justice in Transportation Planning, climate justice in transportation planning seeks to address disparities in accessing sustainable and equitable transportation options, including public transit, walking and biking infrastructure, alongside reducing emissions stemming from transportation and meaningfully engaging communities to understand their needs and priorities. To achieve these aims within a timeline that aligns with the urgency of the climate crisis, it is important to address two key context-driven challenges to transportation sustainability and accessibility at the UBC Point Grey campus and its neighbourhoods.

1 COMMUTING AS CORRELATED TO UBC'S LOCATION

A high number of commuting trips to UBC is imposed by the geographic location of UBC's Point Grey campus on the western edge of Metro Vancouver. When assessed in combination with projections of an accelerated daytime population growth and limited residential housing expansion, greater stress is necessarily placed on existing transportation services and infrastructure, such as the 99 B-Line bus route on the Broadway Corridor. UBC is projecting for student enrolment to increase from over 50,000 students in 2019 to over 60,000 students by 2041 (and associated increases in faculty and staff numbers), amounting to an estimated daytime population of 100,000 by 2050. This trend may be potentially addressed in part via increasing the number of affordable housing units in the neighbourhoods.

2 COMMUTING AS A DRIVER OF CARBON EMISSIONS

The second challenge of relatively high levels of carbon emissions stemming from commutership is particularly urgent, given its centrality to the climate crisis. As outlined in the CAP 2030, transportation by students, faculty and staff make up the largest greenhouse gas (GHG) emissions category, amounting to 135% that of buildings and energy combined in 2019. GHG emissions have continued to rise with the return to in-person classes and growing class sizes—as of 2021, GHG emissions stemming from commuting have further increased to 45,938 tCO2e. CAP 2030 targets a 45% reduction in commuting emissions relative to 2010 levels by 2030, particularly via reduction of reliance on single-occupant vehicles and increases in active transportation and transit-driven trips.

CONTEXT & HISTORY FOR TRANSPORTATION PLANNING

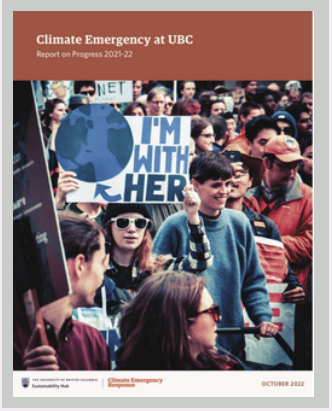
Key Interventions, At a Glance

Transportation planning at UBC is currently guided by UBC Transportation Plan 2014, which underlines targets of improving sustainable transportation, reducing Single Occupancy Vehicle (SOV) travel and reducing daily private automobile traffic levels. Recent interventions to improve connectivity can be strategically organised into two 'levels' of intervention: Enhancing transportation infrastructure on campus, and adding transportation programming and services.

At an infrastructural level, projects included the completion of the new UBC Bus Exchange in 2019, the addition of cycling facilities like secure bicycle-parking at multiple spots on campus and end-of-trip facilities, and the implementation of physical and virtual way-finding signage. Increasingly, campus transportation infrastructure has also been retrofitted to be accessible to community members with disabilities, e.g. via barrier-free accessible parking.

At a programming level, the introduction of the U-Pass BC subsidy program in 2003 was particularly critical to shifting transit modal share from 18% in 1997 to 54% in 2019. Other interventions include the extension of the campus bicycle-sharing program under HOPR, partnerships with vanpool, car-share and ride-hailing service providers and the operation of the free and shared Accessibility Shuttle service on campus. In combination, UBC has been progressively edging towards a more accessible and effective campus transportation experience.

2019 Climate Emergency Declaration



In 2019, UBC declared a Climate Emergency and subsequently convened a Climate Emergency Task Force (CETF) to outline strategic priority areas for action, which notably include Operationalising UBC's Commitments to Climate Justice, Demonstrating Institutional Leadership on Climate Justice, Developing New and Strengthening Existing Partnerships, and Accelerating Emissions Reductions from extended impact sources on campus (in addition to sources within the university's direct control, hence extending to include emissions from UBC-related commuting).

CONTEXT & HISTORY FOR TRANSPORTATION PLANNING

Who is living on campus and in surrounding neighbourhoods?

To provide context for the needs and preferences of current transportation users, data from the 2021 Census Profile was used to construct a profile of residents within the UBC campus and its neighbourhoods. Several population characteristics are examined in relation to the average or median estimates for the City of Vancouver.

A YOUNGER POPULATION

The average age of residents is 36.4 years, compared with the City average of 42.2 years. Seniors aged 65+ years make up 11% of the population, compared with the City estimate of 17%. Additionally, children aged 15 years or under make up 17% of the population, compared with the City estimate of 11%.

A GROWING POPULATION

The population of 'usual residents' has increased to 12,517 as of 2021, representing a 41% increase from the population of 8,855 in 2016.

LOWER RELIANCE ON AUTOMOBILES

Commuting patterns of residents indicate relatively greater preference for walking, cycling and transit-based commuting compared to the City. In 2021, 47% of residents primarily relied on automobiles for commuting, in comparison to the City average of 56%. 34% of residents commuted via active modes on average, compared with the City estimate of 18%.

However, automobile reliance has increased in comparison with 2016, wherein only 41% of commutes had taken place via automobiles. Moreover, only 17% of residents primarily commuted via transit, compared to the 23% City estimate: This potentially reflects a lack of dense transit options in certain neighbourhoods, or public health concerns as a result of the Covid-19 pandemic.

CONTEXT & HISTORY FOR TRANSPORTATION PLANNING

Who is living on campus and in surrounding neighbourhoods?

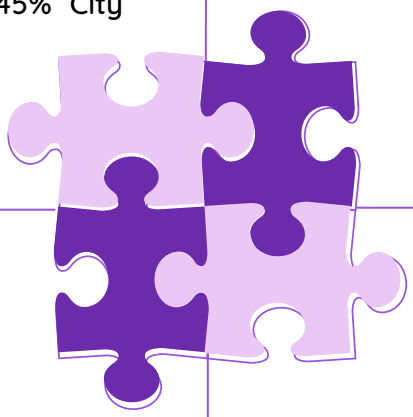
Notably, a stronger diversity of residents exists in neighbourhoods compared to the City on average, when examining both demographic characteristics and household types.

TRANSIENT POPULATION

- 65% of residents are citizens, compared with the 83% City average
- 35% of residents have moved in the last year, compared with the 18% City average
- 68% of residents have moved in the past five years, compared with the 45% City average

VISIBLE MINORITY IDENTITY

- 69% of residents are visible minorities, compared with the 55% City average
- 135 UBC residents are of Indigenous identity, making up 0.98% of its population



HIGH COST OF LIVING

- Average household rent is $2,440 compared with the $1,660 City average
- Represents an increase from 2016, where the average household rent was $1,975
- 49% of residents have shelter costs that exceed 30% of their income, compared with the 29% City estimate

FAMILY COMPOSITION

- 23% of residents are one-parent families, compared with the 15% City average
- 77% of residents are couple families, compared with the 85% City average
- 58% of residents are couples with children, compared with the 45% City average

CONTEXT & HISTORY FOR TRANSPORTATION PLANNING

What forms of housing are current residents living in?

The built form of housing impacts the size of the residential population and resulting composition of residents, in addition to reflecting the affordability and accessibility of housing to students. Using the 2021 Census profile, the following housing form trends were identified.

COMPARED WITH BOTH THE CITY OF VANCOUVER ESTIMATES FOR 2021, AND WITH THE 2016 CENSUS RESULTS FOR THE UBC NEIGHBOURHOODS:

DENSER HOUSING OPTIONS

64% of housing is situated in apartment buildings with 5+ storeys, compared with the 31% City estimate. This represents an increase from 2016, wherein 51% of housing was located in apartment buildings.

0% of the housing stock is comprised of single-detached homes, compared with the 15% City average. Additionally, 35% of housing are attached homes, compared with the 54% City average. This represents a decrease from 2016, wherein 49% of homes were attached—representing a substitution towards 5+ storey housing.

MORE EXPENSIVE HOUSING OPTIONS

Refer to the High Cost of Living section on the previous page.

CONTEXT & HISTORY FOR TRANSPORTATION PLANNING

Who will be living on campus and in surrounding neighbourhoods in the future?

To provide context for the needs and preferences of future transportation users, the Draft 30-Year Vision and its sub-reports (Housing Action Plan & Land Use Plan Update) were used to identify key projected trends. These trends are anticipated to reshape the size and demographic profile of future residents, and their corresponding needs and preferences.

1 A LARGER DAYTIME POPULATION

UBC's daytime population has increased from 61,000 in 2010, to an estimated 80,000 in 2022. By 2050, according to the Draft 30-Year Vision, it expects a daytime population of 100,000. If unaccompanied by any changes to nearby housing stock on campus and in the UBC neighbourhoods, this would represent a significant escalation in the total number of commuting trips daily to and from campus. If coupled with proportionate increases in affordable and accessible housing stock, daily commutes to and from campus could potentially shift away from automobile and transit modes, and towards active transportation modes like walking and cycling.

2 A LARGER POPULATION LIVING IN THE NEIGHBOURHOODS AND A LARGER STUDENT POPULATION LIVING ON CAMPUS

UBC anticipates consistent population growth in students, faculty and staff, and accordingly plans to invest in housing and community amenities appropriately.

- UBC intends to double the total number of neighbourhood housing units from 8.14 million sq.ft in 2022, to 16.48 million sq.ft, and expand locally-serving services like community spaces and childcare accordingly.
- Within campus, UBC intends to add 4,300 student housing beds by the mid-2030s, including 1,000 beds to replace aging facilities and address seismic deficiencies. This will mark an overall increase in the total number of students beds on campus from 14,000 to 17,300.
- UBC intends to update its commitment in 2023 to house at least 25% of full-time students on campus, and eventually achieve its long-term aspirational target to house one-third of full-time students.

CONTEXT & HISTORY FOR TRANSPORTATION PLANNING

3 INCREASED HOMEOWNERSHIP AND RENTERSHIP

Through a combination of appropriately-designed home ownership plans, UBC intends to improve the attainability and financial viability of homeownership for more community members—with staff and faculty being prioritised. For example, UBC will provide faculty and staff early access to on-campus leasehold sales before the general public, pilot a project for affordable on-campus faculty and staff homeownership with BC Housing, and update the loan cap under its Prescribed Interest Rate Loan program for tenure-stream faculty. Additionally, UBC aims to increase the availability of rentership by increasing the percentage of future rental housing offered in new developments.

4 GREATER DIVERSITY IN HOUSING TYPES, TENURES, UNIT-TYPES AND SIZES

UBC intends to privilege affordable housing and rental options by employing a suite of measures, including but not limited to:

- Within the Acadia neighbourhood, UBC plans to redevelop existing housing to add stacked townhouses, affordable mid-rise rental apartments and higher density options.
- Additional faculty and staff housing options will be created through northward expansion of Hawthorn and Hawthorn Place Neighbourhoods.
- Less parking: To keep rental construction costs, financial needs and subsequent rents at a minimum, future university rental building projects will require a maximum of one level of underground parking.
- Bigger units: A minimum proportion of 30% of housing stock will be allocated to 3-bedrooms or greater-sized units in faculty/staff rental buildings.
- Rents for future rental housing will be set to reflect project costs while being priced at 25% below rents charged for comparable buildings and unit types on Vancouver's westside.
- Maximum neighbourhood building heights will be proposed to be increased from 22 storeys to 39 storeys in Wesbrook Place, 28 storeys in Stadium and 35 storeys in Acadia.
- Current neighbourhood Floor Space Ratios (FSR) maximums will be removed to allow more diverse forms of development: Future FSR estimates may range from 0.8 FSR on East Campus, to 2.1 FSR in Stadium and 2.3 FSR in Acadia.

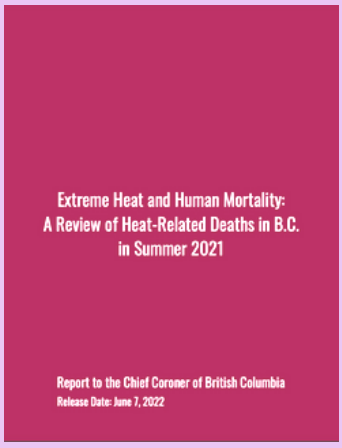
CONTEXT & HISTORY FOR TRANSPORTATION PLANNING

5 GREATER ACCOMMODATION OF UNDERREPRESENTED GROUPS

UBC intends to improve the financial, physical and social accessibility of housing by making explicit accommodations to support underrepresented groups such as lower income staff and faculty, families with children and IBPOC community members.

- Non-UBC on-campus employees (e.g. retail workers, University Neighbourhood Association staff) will subsequently be considered to be eligible for campus market university rental housing, though UBC faculty, staff and students will continue to be prioritised.
- The Rent-Geared-to-Income pilot program for moderate-income faculty and staff will be made permanent, with a yet-to-be-determined expansion in the total number of staff spots (from the current 100 spots).
- Priority housing access will be preserved for Indigenous students.
- Physical accessibility upgrades to student housing and neighbourhood rental housing will be funded and implemented (to support community members with mobility needs).
- Two 'Future Planning Areas' are intended to be established in Acadia to preserve existing student family housing and childcare facilities.
- UBC's Child Care Expansion Plan will be updated to maintain pace with campus growth.

Housing Needs & Heat Vulnerability



With the greater incidence of extreme heat events, it is critical to recognise that underrepresented community members may experience heat health risks to a greater extent—particularly older adults, persons with chronic health conditions and mobility issues, and persons living alone with limited access to cooling. Extreme heat events may further impact the accessibility of different transportation modes (e.g. walking, cycling) and impact travelling behaviours as a result. While designing greater and more diverse housing stock, corresponding community facilities and transportation infrastructure, heat vulnerable-community members must be considered carefully. Heat-moderating facilities or features could include:

- Cooling centres
- Air-conditioning units and lobby areas, community spaces, etc.
- Sheltered transit facilities, e.g. sheltered bus stops
- Dense tree coverage or other shading features along cycling pathways

KEY INSTITUTIONS

While transportation planning is primarily led by Campus + Community Planning, consultation and collaboration with other offices and stakeholders have influenced emerging directions for planning.

CAMPUS + COMMUNITY PLANNING

- Primary actor in transportation planning
- Worked to reduce automobile trips to/from campus since 1997
- Emphasises sustainable transportation options

SUSTAINABILITY HUB

- Established in 2009
- Facilitates collaboration and engagement with other offices to catalyse change
- Tasked with convening and coordinating UBC's climate emergency response

UNIVERSITY NEIGHBOURHOODS ASSO.

- Operates facilities and maintains green spaces in UBC neighbourhoods
- Manages parking and coordinates with Building Operations for snow removal

PROPERTIES TRUST

- Private developer owned by UBC
- Manages infrastructure development projects in the neighbourhoods as well as on campus, including over 12 million square feet of space in the UBC Vancouver and Okanagan campuses.

KEY INSTITUTIONS

Collaborations between the various institutions and offices may take place at different levels. While there may be no standardised timeline for regular meetings between UNA and C+CP staff, for example, formal committee meetings may occur for some leadership. Strategic consultation meetings may occur as part of the drafting process for broad plans such as the Climate Action Plan 2030, as well as for more specific plans (e.g. to govern building emissions reductions via REAP 3.2 2020).

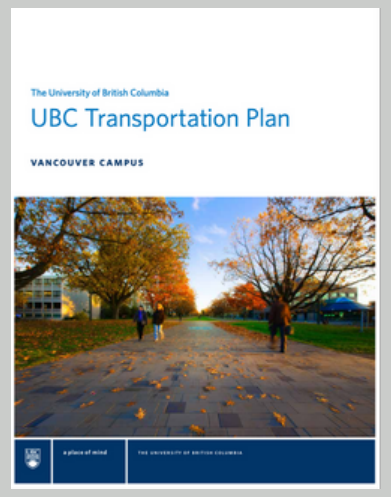
SEEDS Sustainability Program

One key opportunity for collaboration among a great variety of stakeholders at different scales is the SEEDS Sustainability Program, which brings together students, faculty, planning offices and institutions, external and regional planning agencies, corporations and other actors. Several project examples targeting different facets of transportation planning and infrastructure are highlighted in the following table.

Project Title (Year)	Stakeholders Involved
UBC HOPR Bike Share Program: Student-reported experiences and barriers. (2021-22)	School of Kinesiology, Student Recreation Centre
Wesbrook Mall Redesign - Phase 4 (2021-22)	Civil Engineering Faculty, C+CP
Parking Policy for Sustainable, Accessible Communities (2020-21)	C+CP, UBC Properties Trust, UNA, UBC School of Community and Regional Planning
Cycling to UBC Vancouver: Barriers for individuals that live within 10km (2019-20)	School of Kinesiology, C+CP
Overcoming Obstacles to Widespread EV-Charging in Strata-Owned Condos at UBC (2019-20)	E3 Eco Group Inc., UBC School of Community and Regional Planning

KEY DOCUMENTS

2014 UBC Transportation Plan



NOTE: Development of the next Transportation Plan is currently in progress.

Transportation Plan 2014 outlines three key targets for improving the sustainability of transportation to/from campus, in deliberate alignment with the City of Vancouver's Transportation 2040 Plan and TransLink's Regional Transportation Survey. Progress towards achieving these targets are monitored and publicly tracked via the annual release of Transportation Status Reports.

66%

Target 1: Increase Sustainable Travel

Minimum 2/3 of all trips to and from UBC will be made by walking, cycling or transit.

20%

Target 2: Reduce SOV Travel

Reduce Single Occupancy Vehicle (SOV) travel levels to and from UBC by 20% from 1996 levels.

100%

Target 3: Maintain Daily Private Automobile Traffic

Maintain daily private automobile traffic at or less than 1997 levels.

ENGAGEMENT PROCESS

To develop the Plan, three phases of public engagement (with online and in-person opportunities) were held over the duration of a year, supplemented by consultation with stakeholders such as the UNA, UBC Access and Diversity, UBC PT and others via the established Transportation Plan Advisory Committee. By the third phase, respondents were invited to comment on the draft Plan, and input was sought from representatives of Vancouver Coastal Health and Musqueam First Nation.

KEY DOCUMENTS

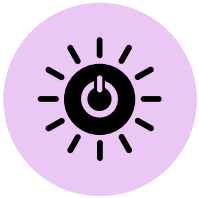
2014 UBC Transportation Plan

With respect to the three climate justice principles of Justice, Resilience and Equity:

The Plan makes good progress in addressing Justice and Equity: Notably, it seeks to prioritise accessible design for persons with mobility challenges. However, the Plan makes limited progress in addressing Resilience and does not discuss adapting or mitigating the impacts of the changing climate and extreme weather events. Additionally, it fails to target or recognise other transport-disadvantaged groups, such as low-income students and historically marginalised racial communities.

SUSTAINABILITY AS A PRIORITY

The Plan loosely identifies the need for shifting to prioritise 'sustainable travel modes', hence explicitly embedding its preference for encouraging walking, cycling and transit over SOV in its targets. Accordingly, its proposed policies and actions are aligned with these goals.



PROMOTING ACTIVE TRANSPORTATION

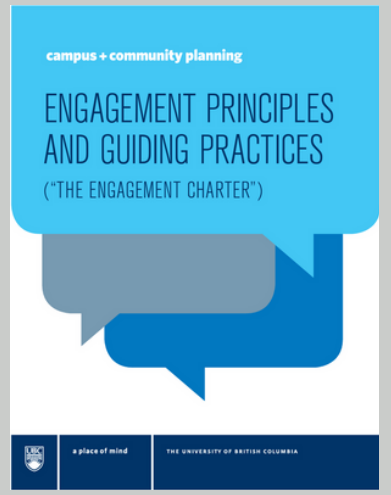
The Plan seeks to promote safe and pleasant experiences through redesigning walking and cycling networks, including more energy-efficient lighting and integrating traffic calming principles. However, public information is lacking on the success or progress of implementing the proposed policies and actions, or its outcomes.

SUCCESSFUL ENGAGEMENT EFFORTS

Outreach efforts were widespread and generated more momentum throughout the process, and the transparency around amendments made based off participant comments was a compelling case study in building community capacity. However, it is unclear as to the extent to which transport-disadvantaged groups were represented in the engagement process.

KEY DOCUMENTS

C+CP Engagement Charter



C+CP Engagement Charter was created in 2014 to provide clarity to the context, design and implementation of public engagement processes undertaken by Campus + Community Planning. The public engagement practices typically seek to consult with the public and university stakeholders in matters of land use planning and development, and the provision of community programming. It comprises ten Engagement Principles, which allow for "two-way communication, informed participation and a culture of collaboration, both during planning processes and on an ongoing basis" (pg. 2).

Notably, an annual review of the engagement activities undertaken by C+CP takes place with respect to the Charter to ensure accountability and transparency. The Annual Reviews from 2015 to 2020 are currently published on the C+CP 'Engagement Principles' webpage.

With respect to climate justice principles,

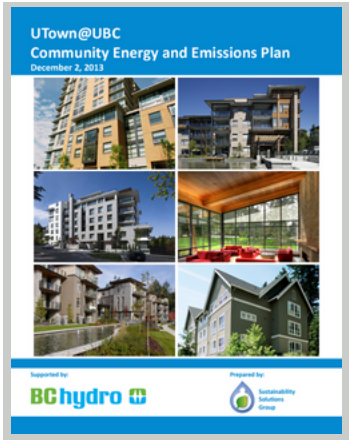
The existence of the Engagement Charter, as well as its guidance towards structuring engagement practices that are responsive to the specific needs and preferences of the target group, is affirming towards principles of justice and equity. The Charter is thorough in identifying aspects of engagement design that could support disadvantaged stakeholders that may be historically marginalised from participation in public engagement exercises. These design aspects include: Type of engagement, timeline for engagement, communication/notification channels used, locations, languages for communication, provision of activities for children, etc.

ENGAGEMENT PROCESS

The C+CP Engagement Charter was established following consultation with 13 on-campus groups and 6 off-campus groups. On-campus groups included Student Housing and Hospitality Services, UNA, UBC Sustainability Initiative, C+CP and Infrastructure Development. Off-campus stakeholders included Musqueam First Nation, City of Vancouver, Metro Vancouver University Endowment Lands Administration & Community Advisory Council, and Parent Advisory Councils.

KEY DOCUMENTS

Community Energy & Emissions Plan 2013



NOTE: Development of the Neighbourhood Climate Action Plan is in progress.

CEEP 2013 covers "UTown@UBC", which refers to the on-campus residential community—inclusive of the five neighbourhoods—which housed approximately 8,500 students and 8,000 permanent residents as of 2013. It expects to house 24,000 residents by 2042 following build-out extensions. CEEP implementation has since been integrated with the Residential Environmental Assessment Plan. By utilising a gradual strategic approach to improving energy efficiency and reducing carbon emissions, CEEP intends to ultimately reduce neighbourhood emissions by 9,312 tCO2e by 2050. In particular, the following targets have been modelled for the category of transportation:

Vehicle kilometres travelled (VKT)

No change in kilometres travelled per person.

Mode split: Walking, cycling and transit shares

An increase in on-campus walking trips from 68% to 76%, in on-campus cycling from 12% to 20% and in off-campus transit from 30% to 45%.

Vehicle type

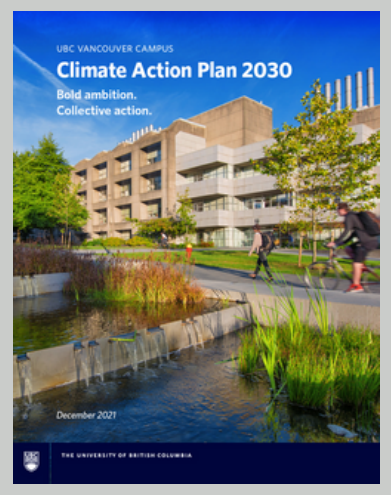
An increase in average fleet fuel efficiency to 40km/litre gasoline by 2050 to reflect a larger electric vehicle fleet (and the increase in the mode share of active transportation).

ENGAGEMENT PROCESS

CEEP was developed with the input of public and professional contributions, including students and UNA residents, project staff, the project consultant team and UBC stakeholders including staff and students. Engagement took place across several mediums (World Cafe public event, online questionnaire, and others); However, the specific design of engagement events and outcomes is not immediately clear.

KEY DOCUMENTS

Climate Action Plan 2030

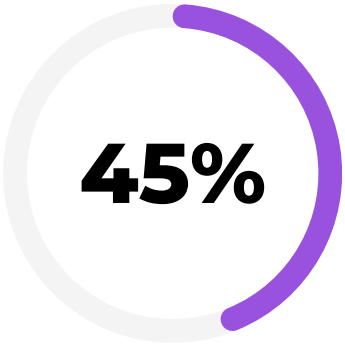


CAP 2030 builds on earlier updates to the first edition of CAP (2020). It explicitly and compellingly recognises the importance of centring climate justice in strategic approaches to addressing climate change, in particular with respect to transportation behaviours.

"UBC recognizes that the ability to partake in sustainable actions may be constrained by lack of privilege and inequality. Engaging principles of climate justice are particularly relevant when developing climate actions related to food systems, commuting and business air travel. Identification and removal of barriers to choosing alternatives will be integral to shifting cultural norms, while ensuring an equitable approach."

By 2030, CAP targets a 45% collective reduction in emissions from extended impact sources.

Two groups of Climate Actions were spotlighted for targeting a reduction in commuting emissions specifically.



ENGAGEMENT AS A PROCESS & TARGET

One integral CAP 2030 target is for 75% of UBC faculty, staff and students to be informed of and actively participating within UBC's climate action programming. Engagement is hence actively integrated as a function of achieving UBC's sustainability goals, with dedicated attention towards identifying funding opportunities to support community-driven sustainability initiatives, improving the correlation between price signalling and promotion of GHG-reduction behaviours like commuting, and others.

KEY DOCUMENTS

Climate Action Plan 2030

With respect to the three climate justice principles of Justice, Resilience and Equity:

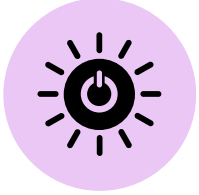
CAP makes strong progress in addressing Justice and Equity, especially with respect to promoting changes in transportation behaviours by targeting action to improve transportation accessibility, affordability and efficiency. However, beyond building community capacity via the Engagement-related Climate Actions, there is limited focus on improving Resilience within transportation systems and infrastructure. Additionally, transparency regarding the detailed timeline for implementation of these actions is limited and no public review of the success of implementation exists as of present.

IMPROVING TRANSPORTATION ACCESSIBILITY

CAP 2030 supports improved transportation affordability via exploring the establishment of a "Sustainable Transportation Levy" within parking permit fees to fund sustainable alternatives, in addition to modifying parking permit fee structures alongside offering subsidised transit passes.

EXPANDING TRANSPORTATION AVAILABILITY

As an extension of existing efforts, CAP encourages continued pursuit of a SkyTrain connection to campus by 2030, in addition to establishing a Sustainable Transportation Program to fund programming and initiatives that enable behavioural changes. It also supports establishing more secure bike storage, dedicated bikeways to/from campus and an e-bike and bike share program with the City of Vancouver.

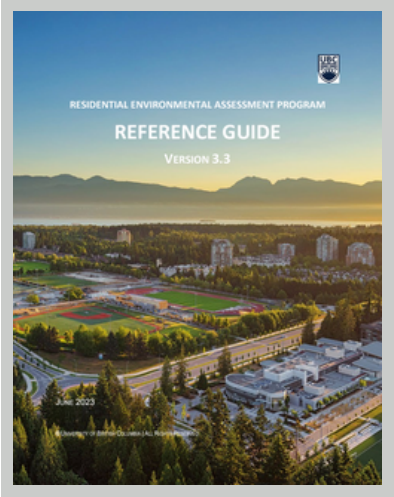


TARGETING EMISSIONS REDUCTION

Beyond facilitating ease of accessibility to cycling and transit, CAP supports the identification of infrastructural, procedural and policy-related improvements to Electric Vehicle (EV) charging, and improvement of capacity to support widespread increases in ownership of EVs among UBC community members that drive.

KEY DOCUMENTS

Residential Environmental Assessment Plan 3.3 (2023)



REAP 3.3 is an updated framework for embedding sustainable building practices as a precondition within new developments of market-based and staff/faculty/student residential housing in UBC Neighbourhoods. Whilst being uniquely applicable for multi-family housing developments as aligned with UBC sustainability goals, REAP is also intended to be comparable to other green building rating systems such as Leadership in Energy and Environmental Design (LEED).

Based on the Checklist provided, REAP 3.3 makes good progress on Resilience but limited progress with respect to Justice and Equity.

Intended Outcome	Checklist Item
Undertaking Transition to Electrified Vehicles	• E&E P11: Electric Vehicle Charging Infrastructure • E&E Credit 5.1: Electric Vehicle Charging Stations
Facilitating Active Transportation & Transit Use + Development	• H&W P1: Bicycle Parking & Storage Room(s) • H&W Credit 2.1: Additional Bicycle Facilities
Building Climate Robustness & Resilience	• CA P1: 2050 Climate Thermal Comfort Modelling and Design • CA Credit 1.2: Enhanced Resiliency
Increasing Inter-Agency Coordination	• I&R Credit 2.1: Research [in coordination with UBC SEEDS or UBC Campus]

KEY DOCUMENTS

UBC Indigenous Strategic Plan 2020

ISP 2020 was implemented as part of UBC's commitment to implementing the United Nations Declaration on the Rights of Indigenous People (UNDRIP). ISP sets out eight goals and 43 actions for collective undertaking on reconciliation. As a first step to embedding climate justice at a strategic planning level, drawing into focus the significance of the ISP is critical to addressing the historic marginalisation of Indigenous peoples—in particular seeking to uplift principles of justice and equity while working closely with Musqueam First Nation. ISP is intended to be a living document that will be reviewed every three years.

SYMMETRIES WITH STRATEGIC TRANSPORTATION PLANNING

While none of the identified goals directly address transportation planning, Goal 1 "Leading at At Levels" encourages the development of Indigenous-focused committees, advisories and leadership roles across the university, which is closely aligned with the Strategic Move of ensuring climate change solutions are guided by community members most impacted by systemic oppression.

CO-DEVELOPMENT OF ENGAGEMENT STRATEGIES

Moreover, Goal 3 "Moving Research Forward" urges co-development of research protocols and community-specific research guidelines, along with ensuring equitable and timely compensation for contributions to research processes. These actions are arguably positively embodied by plans that have contributed to strategic transportation planning at UBC, including the Draft 30-Year Vision and the NCAP, hence representing good progress in prioritising Equity.

ENGAGEMENT PROCESS

The engagement process behind developing the ISP was incredibly thorough. Comprised of the three themes of Research, Learning and Teaching, and Service, the engagement process included 1,200+ in-person events, and the sourcing of 15,000+ individual comments and ideas shared by both Indigenous and non-Indigenous community members. Workshops, open houses, forums and meetings are examples of different mediums that were utilised to seek input from the community.

KEY DOCUMENTS

Emerging: UBC Neighbourhood Climate Action Plan

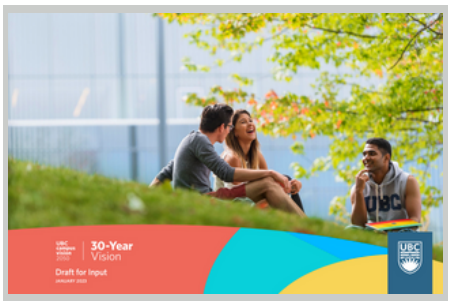
With an expected completion date of June 2024, the NCAP seeks to develop mitigative and adaptive strategies to addressing climate change within the scope of the UBC Neighbourhoods. While the NCAP is developed by C+CP in partnership with UBC Properties Trust and University Neighbourhoods Association, it has outlined a comprehensive engagement strategy (as guided by the C+CP Engagement Charter) to engage key and public stakeholders at various steps of planning and pathways development.

The technical scope of the NCAP outlines six Areas to be addressed.

Critically, Transportation is outlined as an Area for action along potential vectors such as land use planning, low-carbon transportation and transit.

KEY DOCUMENTS

Draft 30-Year Vision & Emerging: Campus Vision 2050



Within Campus Vision 2050, the Big Idea 'Connected Campus' envisions the university campus to be a vibrant and highly-trafficked space that students, faculty, staff and visitors can efficiently commute to and comfortably.

'Connected Campus' is intended to be realised in connection with two other Big Ideas: 'More Housing' and Expanded Affordability', which estimates that by constructing new housing and updating existing housing UBC will increase the number of student beds to just 17,300 by the mid-2030s, and 'Climate Mitigation and Adaptation', which spotlights supporting green mobility options in a bid to decarbonise transportation.

Many actions under the Big Idea(s) are well-aligned with climate justice-oriented recommendations and principles.

For example, expanding the pedestrian priority zone in the campus core and implementing a SkyTrain extension would improve the convenience, safety and comfort of active transportation and transit. Siting and designing buildings to mitigate the impacts of extreme temperatures is optimal to addressing physical and sensory barriers that impact accessibility. The extensive coordination behind developing the Draft 30-Year Vision further reflects close inter-agency coordination between multiple key and relevant stakeholders.

KEY DOCUMENTS

Draft 30-Year Vision & Emerging: Campus Vision 2050

ENGAGEMENT PROCESS

Of particular note is the robust and comprehensive engagement strategy behind the development of the Draft 30-Year Vision, which was successful in both breadth and depth. A total of 9,000 participants were engaged across online tools, open houses, workshops, pop-up booths and other concerted discursive events. Beyond the broad UBC community, equity-seeking groups were specifically targeted, and a co-developed engagement campaign was used to engage Musqueam staff and community members.

CASE STUDY: ENGAGING EQUITY-SEEKING GROUPS

Several best practices were employed by the engagement team to improve the equity of participatory events targeting equity-seeking groups which were historically excluded from or neglected by participatory campaigns. For example, Community Conversations (60-90 minute events to engage 6-14 people) were organised with monetary compensation for participants. During Open House events, childcare services were provided on-site to improve the accessibility of events to young families. Moreover, engagement materials were translated into dominant languages of neighbourhood residents, and existing community groups and mobilisations were leveraged for effective publicising of events. In culmination, **accessible participatory events were created by closely considering formats, timings, locations, ways to collect feedback and more.**

KEY PROCESSES OF TRANSPORTATION PLANNING

UBC Transportation Jurisdiction

While transportation infrastructure and services may impact all visitors to and community members of the UBC campus and its neighbourhoods, its construction, operation and maintenance is not entirely under the domain of the university's control. On transportation issues beyond the university's direct jurisdiction, UBC is able to be an influential and responsible partner, stakeholder and advocate for the campus community.

UNDER THE DIRECT CONTROL OF THE UNIVERSITY

Guiding land development through planning, housing and urban design policies.

Regulating parking policy and campus streets.

Building and maintaining campus roads, sidewalks and public spaces.

Influencing the campus community to make more sustainable transportation choices.

UNDER REGIONAL OR PROVINCIAL CONTROL

The BC Ministry of Transportation and Infrastructure is responsible for building and maintaining major roads and highways, such as West 16th Avenue.

TransLink operates public transit to and from campus, such as the 49 and 68 bus routes.

KEY PROCESSES OF TRANSPORTATION PLANNING

Climate Emergency Preparation & UBC Transportation

Mitigating and Adapting to Extreme Weather Events

Extreme weather events are particularly challenging for the university to respond to. The current primary measure the university is able to undertake in response to extreme weather events, such as heavy snow, is to cancel classes, which is both a big decision and one that has to be made in advance—which is difficult to predict. Additionally, beyond weather conditions, the university decision to cancel classes is dependent on regional responses to extreme weather conditions, such as if transit buses are unable to run because of heavy snow and ice build-up. However, mitigatory measures such as retrofitting buses with winter tires are dependent on external stakeholders like TransLink and Coast Mountain Bus Company.

Auditing the Condition of Transportation Infrastructure

Part of efforts to build climate robustness and resilience in relation to infrastructure include identifying and tracking climate resilience performance measures, to ensure that resilience upgrades can take place where necessary. While UBC Transportation is currently undertaking the establishment of a detailed asset management program for the campus road and pathway networks, current maintenance schedules are based on manual observation and assessments. Moreover, budget is a key factor in affecting the amount of maintenance work that can be conducted annually.

Improving the Resilience of Transportation Infrastructure

UBC Transportation considers its biggest challenges with maintaining its transportation infrastructure to be (1) Addressing wear and tear on roadways due to heavy bus loads and construction trucks and (2) Maintaining intricate hard landscape treatments where specialties are required. Greater advocacy for more consistent and hard landscape designs are currently in place. However, it is unclear if there are concerted efforts to conduct risk and vulnerability assessments and subsequently develop improved landscaping and infrastructure to better withstand climate shocks and stressors.

In conversation with **Krista Falkner, Transportation Engineering Manager at C+CP**

KEY PROCESSES OF TRANSPORTATION PLANNING

Identifying Equity-Seeking Groups

Any group experiencing collective barriers to their ability to move comfortably and safely to, from and around campus are considered equity-seeking groups in UBC's transportation planning work. This includes people facing attitudinal, historic, social and environmental barriers to their mobility, whether based on age, disability, ethnicity, economic status, gender, nationality, race, sexual orientation or transgender status, etc. In determining historic underrepresentation, UBC Transportation is guided by the definitions from UBC's Equity & Inclusion Office and advice from staff at the Equity & Inclusion Office, Office of Indigenous Strategic Initiatives, Office of VP Students – Strategic IBPOC Initiatives and others.

UBC Transportation works with C+CP's Engagement & Communications team to ensure that a broad range of perspectives inform its planning work and sustainable transportation programs and initiatives, leveraging C+CP's established relationships with equity-seeking groups on campus, and doing its best to meet the community where they are by attending scheduled meetings and joining community events.

In progress towards better embedding climate justice into its transportation planning processes, responding to the climate emergency and improving climate resilience are both increasingly prioritised in the updated and emerging Transportation Plan.

In conversation with **Adam Hyslop, Transportation Planning Manager at C+CP**

KEY PROCESSES OF TRANSPORTATION PLANNING

UBC Transportation Survey

An annual online survey is conducted to identify the experiences and preferences of UBC-affiliated transportation users, including full-time students and staff, part-time students and staff, faculty, non-UBC employees, visitors and neighbourhood residents. Multiple facets of transportation are assessed, including the accessibility of bicycles and e-bikes, vehicle ownership and car-share accessibility, purpose of car-share trips, on-campus and off-campus modality preferences, average commute time, and others.

In 2022, the UBC Transportation Survey underwent modifications to improve its inclusivity:

UBC Transportation Survey 2022	
Feature	**Summary of Engagement Feature**
Duration	The online survey was open for 1 month, from October 27 to November 27, 2022. This enabled greater participation and awareness from community members, compared with summer periods.
Incentives for Participation	Participants were able to enter a draw for prizes worth over $1,000.
Outreach Process	Invitations to participate in the survey were communicated through a broad range of channels, including targeted outreach to equity-seeking groups, on-campus signage and pop-up events.

KEY PROCESSES OF TRANSPORTATION PLANNING

UBC Transportation Status Reports

Annual status reports are produced by UBC Transportation to evaluate its success in relation to achieving the three Targets outlined in the 2014 Transportation Plan. Notably in its 2021 Transportation Status Report, UBC's assessment was that it:

- Performed fairly strongly in achieving targets for transit use and maintaining SOV trips per person, but
- Made limited progress in meeting targets for total shares of transportation via transit/walking/cycling, as well as in addressing the total number of SOV vehicle trips.

1

REDUCING CARBON EMISSIONS

Explicit messaging was present regarding targeting emissions reduction, which is closely related with climate justice goals. However, limited attention is paid to transportation equity.

2

DATA COLLECTION METHODS

While relying heavily on screenline counts, Transit Ridership estimates appear to be inclusive towards certain groups (e.g. night-shift workers) since manual observations take place from 6:00AM to 4:30AM on a given day.

3

ASKING THE RIGHT QUESTIONS

By investigating the reasons why people rely on SOV for their commute, e.g. 'to pick up children from daycare', UBC Transportation considers distributional justice concerns behind needs and preferences for car-use.

4

OTHER ASPECTS?

It is not immediately clear if factors such as usage rates of bicycle parking racks on campus, impacts to transportation modal shares due to extreme weather events, etc. are systematically considered within reports.

KEY PROCESSES OF TRANSPORTATION PLANNING

UBC Transportation Background Reports

C+CP has commissioned background research on several issues in recent years, which is primarily closely aligned with Transportation Planning's intention to support the advancement of safe walking experiences and (financially) accessible commute via transit. In particular, the reports surrounding West 16th Avenue have led to actual change, e.g. the implementation of a roundabout at West 16th and Wesbrook Mall, as well as Rectangular-Rapid Flashing Beacons (RRFB) crossings for pedestrians (in place of a costly investment into an overhead crossing).

Topics of Background Reports	
Date	**Title of Background Report**
November 2011	Pedestrian Overpass Study for West 16th Avenue
October 2011	Wesbrook Place Traffic Analysis of Redistributed Dwelling Units
March 2011	Off-Campus On-Street Parking Study [Assessing impacts. of non-residential parking-users]
February 2006	Roundabout Consultation Report re: West 16th Avenue
May 2005	U-Pass 18-Month Review

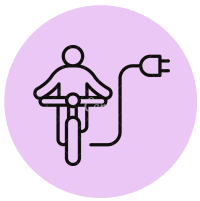
KEY & UPCOMING MOBILITY INITIATIVES

FACILITATING TRANSIT USE: U-PASS BC

U-Pass BC provides UBC students with unlimited access to TransLink services (bus routes, Skytrains and the SeaBus) via a subsidised transit pass that is mandatory for all members of UBC's AMS, costing $180.40 per Winter term. In 2019, 95% of students participated in the U-Pass program.

HOPR BIKE-SHARE PROGRAM ON CAMPUS

Launched in July 2019, HOPR bikes can be used around and within the UBC campus via 80 designated hubs and an additional 200 bikes in Summer 2023. However, the bikes are not available for use to commute to UBC from other parts of the City. Subsidised plans are available for students, faculty, staff and neighbourhoods residents.



MOBI BIKE-SHARE & E-BIKE EXPANSION

Mobi by Shaw Go Bike-Share is currently available City-wide. However, no docking stations are currently present at UBC. As of February 2023, the BC Provincial Government contributed $500,000 to Mobi to expand bike-sharing to UBC, including 10 e-bike sharing stations. Discounted annual memberships are available for students, faculty, staff and residents.

MODO ROUNDTRIP & EVO 1-WAY CAR-SHARES

Multiple car-share programs have expanded to UBC, with availability provided to students, faculty and staff that are 19 years-old (with an "N") or 16 years-old (with an "L"). Payment rates are dependent on the membership plan chosen by drivers and usage fees imposed by time and distance travelled.

LIFTANGO CAR-POOLING PARTNERSHIP

The Liftango partnership facilitated development of a free carpool network exclusively comprised of UBC students, faculty and staff. A UBC affiliated e-mail address must be used to sign up. Moreover, beginning May 1, 2023, drivers may earn up to $2 per day on their UBCCard with use of the Liftango app (and with pickup of at least one person during their trip).

KEY & UPCOMING MOBILITY INITIATIVES

WAYFINDING: COMMUTIFI PLATFORM

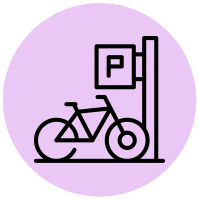
The UBC partnership with online portal Commutifi has enabled the campus community to identify the most suitable route and travel mode options for commute to campus. This optimal route is devised following an assessment of current travel mode preference and commute days.

WAYFINDING: UBC CENTRE FOR ACCESSIBILITY

An updated and currently in pilot-testing online wayfinding map has been created by in partnership with the Centre for Accessibility to identify suitable, efficient and seamless routes for travelling around campus depending on mode of transportation (walking, cycling, wheelchair-rolling), with accessible building entrances identified as well.

UBC ACCESSIBILITY SHUTTLE

The shuttle is a free, shared ride service for persons with mobility challenges. It travels along a designated route and makes frequent stops within the pedestrian core areas on campus, and it includes a storage trunk to transport mobility aids. The shuttle is operated from Monday to Friday, 9:00AM to 4:30PM.



BICYCLE PARKING + PROJECT 529

UBC has retrofitted 13 free bike cages and 200 secure (rented) bike parking spaces across campus, in addition to 9,000 outdoor bike parking spaces. Bike locker permits are $20 per month, as of September 2022. Working in tandem is Project 529, a community-based bike registration and recovery service with the aim to #EndBikeTheft at UBC.

COMMUNITY BIKE CLINICS

In collaboration with the AMS Bike Co-op, Community Bike Clinics are organised for free on Thursdays in four rotating community locations, with the intention to equip community members with bike maintenance and cycling skills. Additionally, the Bike Kitchen (located at the UBC Life Building) offers a suite of services and programs like Bikes for BIPOC.

PRELIMINARY CONCLUSION

A preliminary assessment of the embedding of climate justice in UBC transportation planning seems to indicate that:

When viewed in isolation through examining the Transportation Plan 2014 and its unique processes, it appears that UBC Transportation has historically lacked a systematic or strategic focus in embedding climate justice thoroughly within its programming, services and processes. However, the reality of transportation experiences is influenced by a multitude of external factors: The unique geographical location of UBC and its resulting jurisdictional complexities, for example, along with the assortment of Strategic Plans that touch on various aspects of transportation and issues of enrolment and housing that necessarily impact transportation.

Hence, transportation planning must be necessarily viewed more broadly in relation to initiatives and partnerships across C+CP and with other stakeholders. Following the Climate Emergency Declaration of 2019, I find that UBC Transportation Planning is well-positioned to progressively implement just and equitable planning moves, to build a resilient and climate-responsive transportation planning approach to climate change. This judgement is founded on the admirable progress towards rigorous and thorough engagement processes with equity-seeking groups in the development of recent broad-visioning plans such as the Draft 30-Year Vision, as well as the steady progress that has been made in improving the accessibility of transportation around campus, to ensure safe, comfortable and efficient experiences for pedestrians and other active transportation users. Moreover, the adoption of carbon emissions reduction targets for transportation among other targets in frameworks like CAP 2030 and REAP 3.3 suggest a clear and urgent focus on building compact university neighbourhoods and reducing automobile dependency.

However, transportation planning at UBC could benefit from the adoption of more responsive climate resilience measures, along with improved transparency regarding the review and evaluation of progress on identified immediate and long-term actions. Additionally, potential areas for future research include responding to challenges to the future of transportation equity (e.g. posed by over-reliance on microtransit services), and undertaking a systematic mapping or analysis of the transportation experiences of equity-seeking groups within the UBC community.

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