Eur. Transp. Res. Rev. (2017) 9: 43
DOI 10.1007/s12544-017-0258-4

ORIGINAL PAPER

Opening the door to social equity: local and participatory approaches to transportation planning in Montreal

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Received: 28 October 2016 / Accepted: 20 July 2017 / Published online: 2 August 2017

Abstract
Purpose Transportation systems play a key role in providing individuals with a diversity of means to access their desired destinations and have significant impacts on their quality of life. The social perspective of mobility is, however, marginalized in the current model of transportation planning and significant changes are called for. This study aims to identify the barriers and opportunities of local participatory approaches to trigger changes in transportation planning in Montreal, drawing on the concept of social learning.
Methods A case study approach is selected and the participatory processes of two Local Transportation Plans (LTPs) are analysed. Data is collected through document analysis and semi-structured interviews with local transport planners and representatives of community groups. A qualitative content analysis is conducted to assess the outcomes of public participation, the quality of the processes and the perspectives of participants.
Results The results highlight the narrow contribution of the participation of local communities and community groups in the development of LTPs. Furthermore, the participatory process assessed in this research allows for a limited integration of social aspects in the planning process. The main barriers lie in the broader planning context and the organizational structure at the borough level as well as the lack of expertise of the community groups. Nevertheless, LTPs provide a window of opportunity for addressing transport-related social aspects.
Conclusion In order to take advantage of this opportunity and foster social learning towards the desired changes, the process requires the inclusion of clear social equity goals at the metropolitan level. Furthermore, the presence of a skilled facilitator is key to support the integration of diverse perspectives on transportation planning. It is also essential to provide community groups with resources to meaningfully participate in the process, thereby promoting social equity. In sum, LTPs have the potential to further include the social dimension of transport, but further steps are required to foster an equitable and sustainable transportation system. This research is of relevance to researchers and planners wishing to better understand the challenges associated with participatory processes and social equity in transport planning.

Keywords Transportation planning · Socially sustainable urban transportation (SSUT) · Sustainable mobility paradigm · Local level planning · Participation · Social learning

Abbreviations

LTP	Local Transport Plan
LP	Local Planner
CW	Community Worker

1 Introduction

Transportation systems play a key role in providing individuals with a diversity of means to access their desired destinations and have significant impacts on their quality of life.

This article is part of Topical Collection on Transport poverty, equity and environmental justice

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Research has shown that the lack of adequate transportation options is associated with higher unemployment rates and increased risks of social exclusion [1–5]. On the other hand, the presence of high-capacity roads in a neighbourhood can have significant adverse impacts on residents' quality of life in terms of safety, health, air and noise pollution as well as neighbourhood livability [6–9]. Furthermore, the impacts and benefits of transportation systems are often unevenly distributed across regions and population groups [10]. Namely, low-income individuals are more likely to experience higher levels of exposure to car-related nuisances [11, 12] and might face greater barriers to accessibility given the financial and location constraints they experience [10].

Although transportation is increasingly framed as a social issue by researchers and policy-makers [13–16], the social dimension is still largely marginalized in planning processes [2, 13, 17–19]. One reason for this is the dominance of the conventional planning approach, which typically focuses on traffic flows [20–22]. The conventional approach, as described by Banister [20], aims at improving traffic fluidity and minimizing travel times. To achieve these goals, transportation planning has traditionally focused on the technical and physical dimension of transportation [10]. At the same time, the rationalization behind travel flows has contributed to the marginalization of the social perspective of mobility [23]. Nowadays, mobility indicators and congestion relief strategies are still predominant in transportation planning [21, 22].

Given the shortcomings of the conventional approach, there are calls for a change of paradigm in transportation planning [20, 24–26]. While the conventional approach has been described as "a top-down, one-way process, expert driven and technocentric" process [25], recent research is advocating the need for local and participatory approaches in transportation planning [20, 24–26]. They argue that the inclusion of a diversity of stakeholders can contribute to bringing attention to the social perspective of mobility [21, 26, 27] and, in turn, support alternative planning approaches [20, 28]. Although participation in transportation planning is not new, little is known about its contribution to a greater inclusion of social issues and, more broadly, to a paradigm change. There is, therefore, a need for an increased understanding of whether and how local and participatory processes can support a paradigm change in transportation planning. Whereas there is abundant research on participatory approaches on one hand, and on transportation planning paradigm change on the other hand, few studies have bridged the gap between these two fields of research.

This study is thus a case of transition towards local participatory transportation planning, in Montreal, Canada and its implication for tackling transport-related social inequities. The aim of this study is to assess the contribution of participatory processes to a paradigm change in transportation planning in Montreal and to identify the barriers and opportunities for such changes. To achieve this research aim, this study seeks to answer the following research questions:

- RQ1: To what extent do participatory processes of the Local Transport Plans incorporate the social dimension of transport planning and support a change of paradigm?
- RQ2: Why is the participatory process limited in triggering changes in transport planning at the local level?
- RQ3: What are the opportunities to trigger changes in transport planning at the local level in Montreal?

Drawing on the concept of social learning and on participation theories, a conceptual framework is developed to analyze the relationship between the quality of participation and a change in the planning paradigm in Montreal. Two examples of local planning processes in Montreal are used to identify the outcomes of participatory processes in relation to the social needs of marginalized groups, assess the factors that influence the outcomes of these processes, and explore opportunities for change. The contribution of this paper is twofold: i) the study offers a conceptual framework to assess the contribution of local participatory approaches to a change of paradigm in transportation planning, and ii) using this framework, the study provides a greater understanding of the barriers and opportunities of local participatory approaches to foster the inclusion of social aspects within the specific context of transportation planning. This study is of relevance to researchers and planners wishing to assess and improve participatory transportation planning to address social exclusion and social equity.

2 Literature review and theoretical background

2.1 Transportation-related social issues

Accessibility to a variety of destinations is widely cited as the main benefit provided by the transportation systems and a key component of social sustainability [20, 29–32]. Accessibility, defined as the potential for opportunities of interactions [33] or the ease of reaching desired destinations [34] looks at the meaning of trips, rather than at the trips themselves [35]. In this regard, the concept of accessibility is central in transport-related social exclusion and social equity research [13, 36–38]. Access to social and economic opportunities, such as jobs, services and shops, influences the capacity of an individual to fulfil his or her needs and to participate in civil society, which thus contributes to his or her social inclusion [39]. Accessibility objectives therefore have the potential to directly address the needs of individuals, as an alternative to mobility indicators [38].

From a broader perspective, transportation has a supporting role in improving the quality of life of individuals [7, 40]. Quality of life is central in the literature on socially sustainable

transportation, defined as the fulfilment of the values and needs of an individual [2]. For the purpose of this study, the term quality of life is used to refer to the direct impacts of transportation infrastructure on individuals. It excludes accessibility, which is conceptualized as a feature on its own. The direct impacts of transport on quality of life lie mainly in health as well as safety and security issues experienced by local residents, as identified by Jeon, Amekudzi [29]. Negative externalities from car use include noise and air pollution, road accidents, and use of public space [41]. Accordingly, measures aiming at reducing these negative externalities, such as traffic-calming measures, but also development of green spaces, can contribute to increasing the quality of life of local residents.

Citizen and community involvement is also a key feature for addressing the needs of citizens in transportation planning [21] and supporting social sustainability [30]. Beyond the practical issues of accessibility and the impacts of car-based infrastructure, transportation planning has an important influence on how residents experience urban space in their everyday life. Accordingly, the needs and desires of residents need to be accounted for in transportation planning decisions [42]. Also, participation has the potential to promote social equity by supporting the interests of socially disadvantaged groups [43].

Finally, recent studies have looked into the equity of provision of transportation infrastructure [36, 44, 45]. In terms of transport, social equity is understood as an equitable distribution of benefits and disadvantages. However, the term "equitable" in planning leads to different interpretations [46]. Most studies refer to the concept of vertical equity, which suggests that disadvantaged groups should intentionally be favoured over other populations [37]. Broadly speaking, the literature on transportation-related social issues identifies children, youth, low-income, unemployed and disabled populations, ethnic minorities, as well as outer urban dwellers as potentially disadvantaged groups [10]. In this study, we use the term marginalized groups to refer to those transport-disadvantaged populations, with an emphasis on low-income populations.

In sum, for the purpose of this study, the following features are identified as key elements of a socially sustainable transportation system: i) equitable access to opportunities; ii) reduction of negative externalities of transport for all; and iii) representative involvement in decision-making, all of these with an emphasis on marginalized groups.

2.2 Incorporating social issues into transportation planning

Several studies agree that a paradigm shift is needed to address the above-mentioned social issues [2, 20, 24, 32, 47]. Alternative planning approaches emphasize the social dimension of transport by focusing on accessibility and people, rather than on mobility and traffic [20, 32]. For the purpose of this study, we focus on Banister's [20] sustainable mobility framework. This framework prioritizes a transport system based on local concerns and favours active and public transportation. This hierarchy (from pedestrians to cars) is presented as essential for more equitable urban transportation systems, as it provides individuals with a greater diversity of transportation options to access opportunities and contributes to reducing the negative externalities associated with car use. Furthermore, this approach considers the street as a public space to be shared between different users, rather than as a road dedicated to traffic, and prioritizes the integration of different modes, rather than traffic segregation. The sustainable mobility paradigm therefore supports the reallocation of existing road space, designed mainly for cars, to other users and other uses. Finally, as a complement to forecasting and modelling approaches, Banister [20] suggests scenario development and visioning exercises.

Key indicators and elements of an alternative planning paradigm that would address the social dimension of transportation have been explored by previous research [20, 29, 32]. However, little is known on the tools and mechanisms needed to support a change of paradigm in the transportation planning. The potential contribution of participatory approaches has been discussed in recent studies [20, 28], since one of the main goals of these approaches is to gain a better understanding of the social needs of the different social groups [48, 49]. However, in a quantitative assessment of LTPs in the UK, Elvy (2014) found that the benefits of public participation in transport planning have so far been limited with respect to low-income individuals. Elvy [27] therefore highlights that further empirical research is needed to understand the mechanisms and impacts of participatory processes on vulnerable populations. In this regard, Gil et al. [48] conducted an in-depth assessment of the public participation process of the sustainable mobility plan of Ponta Delgada, Portugal, and found that participation contributed to sustainable outcomes. However, no similar study has, to our knowledge, focused on the social dimension of transportation, and on the potential contribution of participation to a paradigm shift.

Overall, there is a growing interest among researchers and policy-makers to incorporate social issues into transportation planning. While participation is seen as an opportunity to foster this paradigm change, it has so far shown limited results and further research is needed to uncover the mechanisms of participation in relation to a change of paradigm. This study thus provides an in-depth assessment of the contribution of participatory processes in local transportation planning to a greater inclusion of social equity. The results provide insights on the barriers and opportunities for participation to bring about paradigm shift and contribute to bridging the gap between the literature on sustainable mobility and research on participatory approaches.

3 Conceptual framework: Social learning through participation

In order to assess the contribution of local participation to a paradigm change in transportation planning, we developed a framework drawing on the concept of social learning and on participation theories. The concept of social learning goes beyond the learning of individuals to include "a change in understanding […] situated within wider social units or communities of practice through social interactions between actors within social networks" [50]. This study builds on the expanded definition of Reed et al. [50] and social learning is understood as a collective learning process conceptualized based on the triple-loop learning process developed by Pahl-Wostl [51]. The concept of triple-loop learning defines social learning as a step-by-step process, which moves through the different phases of learning, from the single to the double and triple loop. Figure 1 illustrates an adaptation of the three loops of social learning. The single-loop learning is defined as an incremental improvement of actions. It stays within the set frame and aims at achieving the defined goals, without questioning them. The double-loop learning addresses the frames, questioning the underlying assumptions and the established goals. It is characterized by new approaches and measures. The third-loop learning refers to a transformation of the context and a change of paradigm, implying a questioning of the underlying values and norms. It leads to new regulatory frameworks and a broader definition of the problem. The learning process is characterized by cyclic and iterative changes. It is assumed that higher levels of learning are more costly. Consequently, the regime progresses within the single-loop learning phase until it reaches the boundaries and constraints of this level, and only then does it proceed to the next learning steps (double-loop, and then to the triple-loop).

With regard to local participation, Pahl-Wostl [51] suggests that citizen participation is essential in order to reach higher level of learning and eventually lead to a change of paradigm. Participation is broadly defined as the "involvement in decision-making with the purpose of influencing the choice(s) being made" [52]. Arnstein (1969, as cited by Booth and Richardson [25]) defines seven levels of participation, with different levels of participation referring to different levels of knowledge and power attributed to the different stakeholders. Ridder and Pahl-Wostl [53] distinguish three levels of participation in local planning: information, consultation and involvement. In the lower level of participation (information), planners simply supply information to citizens and stakeholders. At the consultation level, the planners gather information from the citizens and stakeholders. Both at the information and consultation levels, exchange and dialogue are limited, and the decision-making process stays within the hands of the planners. The third level of participation is the involvement of the stakeholders and citizens, which directly engage the public in decision-making. As shown in Fig. 1, the involvement, understood here as a reinforcing loop between the planners and citizens, is central to the learning process. Citizen involvement contributes to progressing through each of the learning loops.

Although it is agreed that citizen involvement is essential for improving local planning processes, there seems to be no well-established principles for participation at the local level [53, 54]. However, some guiding principles are predominant in the literature. Based on previous studies [25, 52, 53], we identify three principles for successful involvement of citizens in local transportation planning: inclusivity; wide boundaries of the debate; and citizen empowerment. Inclusivity refers to the involvement of all stakeholders early in the process. It assesses the timing of the involvement, as well as the groups that are included or excluded. Regarding the boundaries of the debate, they should be broad enough to give space to new ideas and knowledge, leading to an increase of the range of possible solutions. Finally, citizen empowerment refers to the acquirement of new skills and influence in decision-making. In this regard, participation should allow citizens to learn and

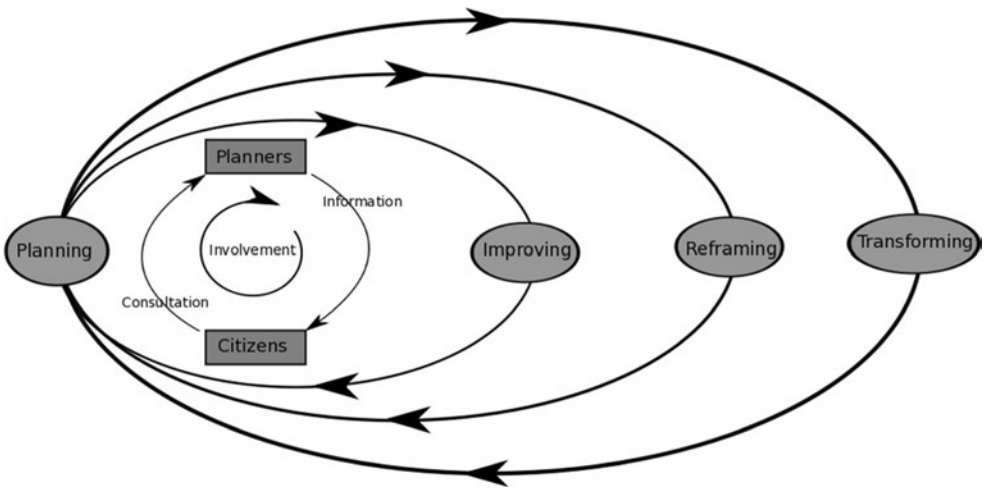

Fig. 1 Framework for social learning through participation. Participation is at the centre of each of the learning loops, emphasizing the contribution of participation to social learning. The figure was created by the authors, inspired from Pahl-Wostl [51]

enhance their capacity to engage and participate in the planning process.

Using the framework developed above, this study analyses the relationship between the quality of participation and a change in the planning paradigm in Montreal. The study focuses on the participatory processes taking place within the context of the Local Transport Plans (LTPs). The planners are the local planners in charge of the LTPs in each borough. Regarding the citizens, it refers to the residents of each borough, with a focus on community groups and marginalized populations. The single-learning loop is defined as a minimal participation of citizens, which targets specific issues within the traditional goals of planning. The double-learning loop refers to a questioning of the goals. In this study, this refers to the inclusion of broader social goals in the planning process such as accessibility, quality of life, inclusion and social equity, as identified in the literature review. Besides, it also brings into play new approaches and tools. Drawing from the sustainable mobility paradigm [20], alternative approaches include visioning on cities, integrating people and traffic, and considering the street as a space rather than a road. Finally, the triple-learning loop corresponds to a change of paradigm, a transformation of the planning processes. This entails the prioritization of social needs, with new regulatory frameworks including social equity indicators. Transportation planning is then seen as a social policy tool, thereby integrating a broader variety of municipal stakeholders.

The research questions of this study are operationalized in light of the framework developed above. The first research question assesses the outcomes of the participatory process in relation to a potential paradigm change. The outcomes are understood here as the issues reported from the different meetings. Based on the theoretical background, the change of paradigm desired for transport planning refers to the prioritization of social issues (accessibility, quality of life and involvement), from a social equity perspective. We first assess the extent to which outcomes of the participatory process relate to these issues. The outcomes of the participatory process are then examined in terms of social learning, using the three learning-loop framework. Research question 2 looks at the factors that influence the outcomes of the participatory process. On the one hand, it assesses the way the participatory processes were conducted, and how the views of the local planners influenced it. On the other hand, it analyses how the perception of the community groups of the LTP influenced their contribution to the process. The features used to analyze the participatory process follow from the participation cycle developed above: the type of participatory process, inclusivity, boundaries of the debate, and empowerment of the citizens. The understandings and perceptions of transport are analyzed in relation to the sustainable mobility paradigm developed by Banister [20]. Research question 3 then explores opportunities for change within the current system. It addresses the relationship between participation and social learning, and assesses the top-down and the bottom-up approaches.

The focus of the research is on the participatory process at the local level, with an emphasis on local planners and community groups. It does not assess the implementation of the LTPs following its development and the related power relationships and network of actors that will come into play. The focus is on the understandings and views of transportation planning in relation to its social dimension, which is central to the planning process.

4 Research design

A case study approach was selected as it allows an in-depth exploration of the processes and perceptions of participants [55, 56]. Montreal was selected as the study area because the current context opens the door towards different planning approaches, with an emphasis on local and participatory planning. It is thus of relevance to examine how this opportunity is materialized and how the social dimension is included in this context. The case study specifically focuses on the participatory processes of two LTPs (Montreal-Nord and Rosemont-La Petite-Patrie). The two settings are used together to draw information on the general participatory planning context. The choice of the settings is mainly based on practical reasons - that they were both developing an LTP at the moment of the study.

4.1 Case study area

The agglomeration of Montreal, delimited by the Island of Montreal, is located in the south of the Canadian province of Quebec. In 2011, the population was 1,886,481 inhabitants, over a territory of 499.1 km^2. The agglomeration comprises of the City of Montreal, divided in 19 boroughs, as well as 15 independent municipalities. Transportation planning is a shared service generally overseen by the agglomeration of Montreal. Regarding public transport, two public agencies are in charge: the *Société de Transport de Montréal* is responsible for the bus and metro networks on the Island, while the commuter trains are under the responsibility of the *Agence Métropolitaine de Transport*. The boroughs are responsible for the local streets and have the power of decisions over the active and public transport infrastructure. The core of the public transport system consists of a metro system, with four metro lines essentially on the Island of Montreal. Proximity to a metro station is generally a great advantage in terms of mobility, since the bus network is considered to be less efficient and less reliable. For regional commuting, there is a network of commuter trains, which operates mainly during peak hours. The metro system and the commuter trains are developed around the Central Business District (CBD).

The agglomeration is nowadays dominated and shaped by car infrastructure and many people depend on private cars to meet their mobility needs [57]. In 2008, the modal share of trips made by private car on the island was 48% [58]. Montreal therefore faces significant challenges for addressing the needs of socially disadvantaged populations [59]. In recent years, the agglomeration of Montreal has committed itself, in its 2008 *Transportation Plan* to significantly reduce car dependency, by investing massively in public and active transportation [60]. The city launched its *Transportation Plan* in 2008 with a growing interest in local and participatory planning. Each borough and independent municipality on the Island of Montreal is required to develop a Local Transport Plan (LTP) based on a participatory approach. LTPs, as requested by the *Montreal Transportation Plan,* should address the specific mobility needs of each borough and are meant to be transportation planning tools based on participation and integrated land-use planning (Ville de Montréal, 2010). The development of an LTP should involve five phases, all including public consultation: i) preparatory study, ii) definition of the local goals of the LTP, iii) detailed diagnostic, iv) intervention plan, and v) drawing up of the LTP. The process varies greatly from one borough to another, and differs in their focus, extent, objectives, level of progress and participatory approaches.

Two boroughs of Montreal were selected for this study (see Fig. 2). Montreal-Nord is a semi-peripheral borough facing important socio-economic challenges, while Rosemont-La Petite-Patrie is a central borough with generally higher socio-economic conditions (see Appendix 1 for socio-economic and mobility data).

Montreal-Nord faces multiple socio-economic challenges, including high levels of poverty and unemployment, and low levels of education among adults. Two specific areas are significantly deprived socio-economically, one of which is officially recognized as an Integrated Urban Revitalization Area.[1] In terms of transportation, the borough has limited access to efficient transportation infrastructure and is crossed by many main roads and boulevards. As shown in Figure 2, the metro network does not serve the borough. At the time of the study, two major public transport projects were being planned: a Bus Rapid Transportation line on one of the major boulevards, linking the suburbs to downtown, and the *Train de l'Est* (train linking the eastern suburbs to downtown) with two stations in Montreal-Nord. In terms of car ownership, one out of three households does not have a car [61]. However, the use of active transportation is also quite limited.

Rosemont-La Petite-Patrie, which includes the areas of Rosemont and La Petite-Patrie, is a central district, with generally higher socio-economic conditions. Although poverty is not a generalized issue in these boroughs, there are clusters of material and social deprivation that do not appear in the aggregated statistics. Some quarters, such as Rosemont-Est, are more deprived than others [62]. Rosemont-La Petite-Patrie is characterized by a relatively good public and active transportation infrastructure. However, the provision of public service and active transportation infrastructure is unevenly distributed across the territory. There are only two metro stations at the west extremity of the territory. The borough is crossed by many big roads, which create problems of pollution and safety.

At the time of the study, both boroughs had launched an LTP process. While the consultation process was almost at its end in Rosemont-La Petite-Patrie, the process had just begun in Montreal-Nord. In both boroughs, an engineering consulting firm was hired to develop the LTPs. In Rosemont-La Petite-Patrie, a public consultation firm was also hired to conduct the meetings with the citizens. Table 1 presents the main activities and tools that were used throughout the participatory process.

4.2 Data collection and analysis

Two types of data were collected to conduct the case study. Documents reporting on the different meetings with the citizens and community groups were obtained (see Appendix 2 for the list of documents). These documents were provided by the local planners and typically consist of reports of the consultations with the citizens written by the boroughs or consultancy. These documents were used to assess the issues and themes that came up during the meetings (RQ1). A limitation of this study is that there were no tapes or transcriptions of the public participation events. Accordingly, the authors relied on a report of the events written by the consulting firm or the borough itself. Nevertheless, these reports highlight which information was retained as a result of the meeting. In addition to the documents, we conducted semi-structured interviews with local planners and representatives of community groups in order to gain a better understanding of the planning process and the underlying perspectives on transportation planning (RQ2 and RQ3). The interviews were complemented with phone discussions. Interviews were chosen over survey since they allow studying the understandings and perspectives of the actors (Gomm, 2004), which are central to our research questions. The list of the interviewees is found in Appendix 2. The interviewees were purposively selected, based on the groups that are relevant to the research problem [56]. The selection of community groups was guided by the ability to reach disadvantaged groups, especially from a socio-economic point of view, but also in terms of transport (elderly and disabled people). In total, 2 local planners (1 in each borough), 8 representatives of community groups and a representative of the consulting firm were interviewed. Distinct

[1] The Integrated Urban Revitalization program is a program of the City of Montreal aiming at supporting areas with many socio-economic difficulties.

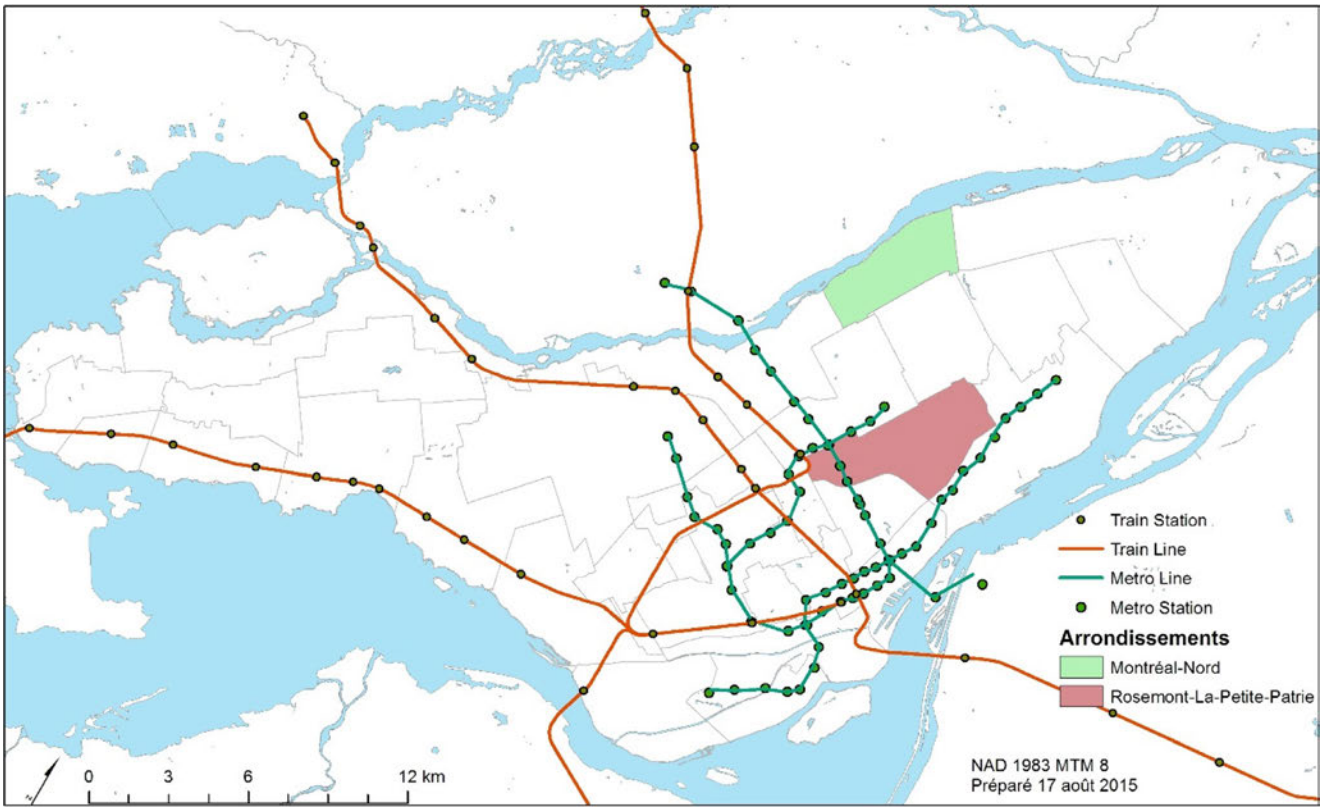

Fig. 2 Location of the two boroughs, including the metro and the train lanes at the time of the study

interview guides were prepared for the local planners, the community groups, and the consulting firm. The local planners were asked general questions about the transportation planning processes at the borough level, including their responsibilities, their priorities and their vision in terms of local transport. They were then asked about their goals and approaches to the development of the Local Transport Plan, and more specifically, to the participatory process itself. More specifically, they were asked about the stakeholders' involvement as well as the benefits, outcomes and challenges associated with the participatory process. Examples of questions include: What are the issues and priorities in the borough in terms of transport? What were the goals of the participatory process, and what did you do to achieve these goals? How did you reach out to citizens for the participatory process? The representative of the consulting firm was specifically asked about their responsibilities and objectives in the participatory processes, and about how the process was conducted. Finally, representatives of the community groups were asked about the transport-related issues experienced by their members, their participation in the participatory process, and their perception of the process itself, and of the LTP more broadly. Examples of questions include: What issues do your members experience in terms of transport? Did you participate in the LTP participatory process, and if so, how? How was the participatory process conducted? Interviews were recorded and

Table 1 Activities and tools of the participatory processes in Montreal-Nord and Rosemont-La Petite-Patrie

Montreal-Nord	Rosemont-La Petite-Patrie
Consultation meeting opened to the citizens and community groups	Local quarter meetings held in three different places (kiosk booths on commercial streets)
Survey Mobiligo* for employees and employers of one health centre	Consultation meeting with community groups in Rosemont
Information website	Survey Mobiligo* for employees and employers
Focus groups with experts and community groups (to come)	Information website with a platform for citizens to comment on transport issues in the borough
	Citizen forum

*Mobiligo is an external organization specialized in mobility management. It conducted surveys regarding employees' mobility around the main institutions and employment zones

transcribed. One interviewee refused to be recorded, and notes were taken during the interview and used instead of a transcription.

Qualitative methods were used to answer the three research questions. Qualitative content analysis was used to analyse the reports and the transcripts of the interviews, as it allows identifying the themes and trends that can then be classified to answer the research questions [55]. The first step of the analysis identified themes and issues discussed during the participatory processes to assess the extent to which social issues were incorporated (RQ1). In order to do so, we analysed the documents reporting on the different meetings with the citizens and community groups. Conventional qualitative content analysis [63] also referred to as inductive category development, was used to derive categories directly from the analysed documents. The categories were not predefined, in order to allow all interesting categories to emerge during the analysis [64], and to gain direct information from the documents. Categories were developed through a stepwise process as indicated by Mayring [65]. Following the identification of categories, we developed a tree diagram to illustrate the relationships between the different categories. This method allowed the researchers identifying how transport is understood throughout the participatory process. We then assessed the extent to which accessibility, quality of life, involvement and social equity was considered in the documents. Based on the semi-structured interviews conducted with the community groups, we also analysed whether their concerns emerged in the documents of the participatory processes. Finally, we examined the outcomes in relation the three learning-loop phases: improving, reframing and transforming the process.

The second step of the analysis aimed at identifying barriers and opportunities to a greater inclusion of social aspects of transportation planning through local participation (RQ2 and RQ3). This was mainly done through the analysis of the interview transcripts. Drawing from Hull [28], the content of the semi-structured interviews was analysed to: i) provide a detailed account of the case, and ii) identify the perspectives of the participants in the case study. Given the small number of interviews, the transcriptions were assessed by themes, without the use of a coding system or software, as done in previous transport studies [28, 66]. The themes were defined based on the theoretical background and conceptual framework defined above. Firstly, the content of the interviews was analysed in terms of the inclusivity of the process, the boundaries of the debate and the empowerment of the citizens to assess the quality of the process. Then, the views of local planners and representatives of community groups on transport were assessed based on the features of the sustainable mobility paradigm (transport-related social issues, accessibility and mobility, mode hierarchy, integration of modes, allocation of space, conception of the street as a public space, alternative planning approaches such as visioning and scenario developments). The analysis of the interviews was complemented with the analysis of the documents, especially with respect to the boundaries of the process.

Different sources (documents, interviews with consultant, planners and community groups) were used to validate the data when possible, as indicated by Gomm [64]. This was especially relevant when assessing how the participatory process was conducted. The findings from the documents and interviews with the different interviewees were used to corroborate the data and we found that the responses of the planners were in line with the responses of the different community groups, and consistent with what was found in the documents. Finally, to support our interpretation of the data, detailed descriptions of the findings were provided through quotes and excerpts of the documents. Interviewees are referred to anonymously, since some of them expressed this preference. They are identified based on their position or the community group they represent. LP1 and LP2 represent the local planners while CW1 to CW4 refer to the representatives of the community groups that are directly quoted. Additionally, the name of the community group is explicitly mentioned only when relevant. Also note that all quotes are translated from French by the authors.

5 Results and analysis

5.1 Assessing the contribution of participation to a paradigm change (RQ1)

In order to assess the extent to which the outcomes of the participatory processes address the needs of the disadvantaged groups, this section presents the transportation issues reported by the community groups during the interviews, followed by an analysis of the reports of the meetings with the citizens and community groups.

5.1.1 Transportation issues reported by the community groups outside the participatory processes

The main issues that emerged from the representatives of community groups were related to questions of accessibility. Most respondents stated that the cost of public transport was a major concern for many low-income individuals. However, this falls outside the power and responsibility of the local planners. Regarding local planning, accessibility to employment zones and employment services by public transport was a common issue in both boroughs, especially for low-income people. For example, the representative of *Démarche-Action-RUI* highlighted the lack of connectivity to employment clusters within the borough as one of the main issues in low-income areas. Representatives of community groups in Rosemont-La

Petite-Patrie also identified accessibility to local services as a major issue for their members, as illustrated below:

> "*For the health centre, it is a major issue, because people living at the far east of the borough need to take 3 busses to reach the health centre, and 3 busses mean they need to pay two bus tickets.*" *(CW3)*

> "*And we understood that when we talk about transport, people don't even have the means to come to the Lapalme centre [*community center*] for example.*" *(CW4)*

The interviewees also stated that spatial access to food banks was a concern in the community, as well as the lack of grocery stores in Rosemont-Est: "*We talked about the difficulties of low-income populations, to have access for example to a market, or to vegetables, and we know that Rosemont-Est is a food desert*" (CW4). Although this last issue is not directly related to transportation infrastructure, it brings up the question of integrated transport and land-use planning.

The lack of public transport was also reported as an important concern by the community groups. More specifically, the interviewees criticized the poor public transport provision outside the main axes, and outside peak travel times. For example, in Rosemont-La Petite-Patrie, the interviewees perceived public transport on the North-South axes, in peak hours (towards and from the CBD) as very efficient in contrast to the East-West axes, as well as the service in the direction opposite of rush hour. For example, one interviewee stated:

> "*On the Bélanger Street [*east-west street*], that has no public transport, would it eventually be something to consider, to put at least one bus where people could connect with bus 69 or Pie-IX, because now, what's happening is that people need to walk long distances. It does not seem important when we are fit, but when we're not, it is.*"*(CW4)*

In both Montreal-Nord and Rosemont-La Petite-Patrie, interviewees pointed out that the services within the boroughs, and between the boroughs, had to be improved to meet the needs of the socially disadvantaged people, rather than increasing access to the CBD. In this regard, the representative of *Démarche-Action-RUI* in Montreal-Nord, responsible for the urban revitalization program, criticized the emphasis put by the borough on the new transportation projects, the Bus Rapid Transportation System and the *Train de l'Est*. In her opinion, these projects would not serve the low-income local residents. In Rosemont-La Petite-Patrie, the lack of public transport in more deprived areas was also identified as an issue by all interviewees. Representatives pointed out that socio-economically deprived areas had less access to efficient public transport while people with higher incomes live near metro stations:

> "*There is a poor area in the east of Rosemont, the area is more deprived in terms of infrastructure.*"*(CW1)*

> "*The higher-income individuals are located near to the blue line* [metro]. *Here, in the Old-Rosemont, it's not so good because we need to take bus 47 or Iberville. There is the bus on Saint-Michel that works well, but it's the only one really, or Pie-IX. And the east, I think that that's what's worst if you don't have a car.*" *(CW2)*

Prior to fieldwork, the impacts of transportation infrastructure on quality of life (i.e. health, safety and security issues, green spaces), were hypothesized to be a key issue, especially regarding social equity. However, the interviews revealed that the members of the community groups did not complain about the adverse impacts of transportation infrastructures.

Finally, there was a consensus on the lack of information on the specific needs of the different social groups. More specifically, the representatives of three community groups in Rosemont-La Petite-Patrie, although not aware of specific issues experienced by the groups they serve, mentioned the lack of studies and reflection on the topic as well as the relevance of conducting future studies to find out more about their needs.

5.1.2 Outcomes of the participatory processes

The outcomes of the participatory processes refer to the issues and discussions that were reported from the consultation meetings. Based on the analysis of the reports, four main categories emerged: infrastructure, impacts, places and groups (Table 2). Infrastructure is understood here in a broad way to include physical infrastructure, but also organizational characteristics, such as the frequency of busses. Impacts relate to the consequences of transportation infrastructure on individuals.

The analysis of the documents revealed that most ideas and comments reported in the documents referred to the infrastructure, as defined in Table 2. For example, citizens requested better public transport (more frequent and reliable bus services), better bicycle paths (maintenance and separation from the cars) as well as safer infrastructure for pedestrians (special crossings and street lights). Figure 3 illustrates the categories that we identified in each of the borough, and their interrelationships. For example, a line between public transportation infrastructure and employment zone shows that issues of public transportation were discussed in relation to an employment zone (see example for public transportation infrastructure in Table 2). The same applies for groups. In Rosemont-La Petite-Patrie, most of the outcomes were related to the provision of public transportation, both for specific places

Table 2 Categories emerging from the document analysis of the reports of the participatory processes. The predominant categories are the transportation infrastructure and the impacts of transport. Examples of comments from the reports are included to illustrate the sub-categories

Sub-Categories	Definition	Examples
Infrastructure		
Public transport infrastructure	Physical infrastructure or services (frequency, network, comfort, reliability)	Public transport provision should be improved around the employment zones.
Active transportation infrastructure	Physical infrastructure or services influencing walking and biking in the borough	The width of the sidewalks is insufficient.
Motorized vehicle infrastructure	Physical infrastructure or services influencing traffic (car sharing, parking)	There is always traffic jam at this intersection.
Impacts		
Safety	Issues of safety, security, and danger.	Some big intersections are unsafe.
Accessibility	The potential or the challenges to reach certain destinations	Access to the new train stations is important
Quality of life	Reduction of negative externalities of transport and improvement (heat island, green spaces)	Greening of alleyways is desirable
Places		Groups
Employment zones		Elderly people
Parks		Disabled people
Schools		Pedestrians
Hospitals		Cyclists
Train and bus stations		
Quarters (Rosemont-Est)		

(Rosemont-Est, employment zones and parks) and specific groups (elderly people and disabled people). Additionally, the documents reported that citizens were concerned with safety of pedestrians and cyclists, namely with respect to the quality of active transportation infrastructure (sidewalks for example) and motorized vehicle infrastructure (intersections for example). In Montreal-Nord, a broader variety of issues emerged. The impacts of car infrastructure (heat islands and boulevards near to green spaces) on the quality of life were discussed. Issues of accessibility to parks and school were also explicitly addressed in relation to public transportation infrastructure and safety.

Nevertheless, in both boroughs, the questions of accessibility, quality of life and involvement were marginally addressed and the focus lay mainly on technical aspects, such as the infrastructure, rather than on the needs. With regard to accessibility, most issues reported by the community groups were not specifically addressed in the participatory processes. In Rosemont-La Petite-Patrie, none of the reports discussed the lack of accessibility to services and food shopping facilities within the borough (see Fig. 3), although it emerged as a major issue in the interviews with the community groups. Similarly, in Montreal-Nord, the lack of access to services and employment within the borough or to neighbouring boroughs was not reported in the documents. The representative of the *Démarche-Action-RUI*, however, pointed out in the interview that this was a major issue for low-income individuals in Montreal-Nord. In contrast, many comments in the reports related to the new transportation projects linking the borough to the CBD. Also, in both boroughs, discussions about employment zones concerned mainly the attraction of qualified workers in the borough, rather than the access of local residents to employment. The debates focused on how to improve access to the main employment poles rather than on the accessibility needs of the different groups. The lack of access to opportunities for marginalized populations was thus not investigated in the participatory processes.

In terms of quality of life, the reports superficially addressed the broader implications of car traffic and infrastructure on local residents. Issues of safety were discussed in both boroughs, but they were mainly related to the types of places (parking zones, green spaces) rather than targeting specific deprived geographical locations (see Fig. 3). In the same way, citizens expressed concerns about safety for pedestrians, cyclists and youths in general, but not as a concern for residents living in high-traffic areas (see Fig. 3). In Rosemont-La Petite-Patrie, the reports only mentioned issues of safety; other broader elements of quality of life (such as heat islands or air/noise pollution) were not found in the documents. In Montreal-Nord, the report of the citizen meeting mentioned that citizens were concerned with heat islands created by parking lots and the protection of green spaces near high-capacity roads. However, out of 45 issues reported in the document, only three of them were related to the quality of life, and none of them were included in the main summary of the meeting. Overall, the analysis of the reports of the meetings in both boroughs suggests that citizens did not emphasize the issues related to the negative externalities of cars around their place of residence.

With regard to the representative involvement of citizens (see Fig. 1), the outcomes reflected a limited influence of the

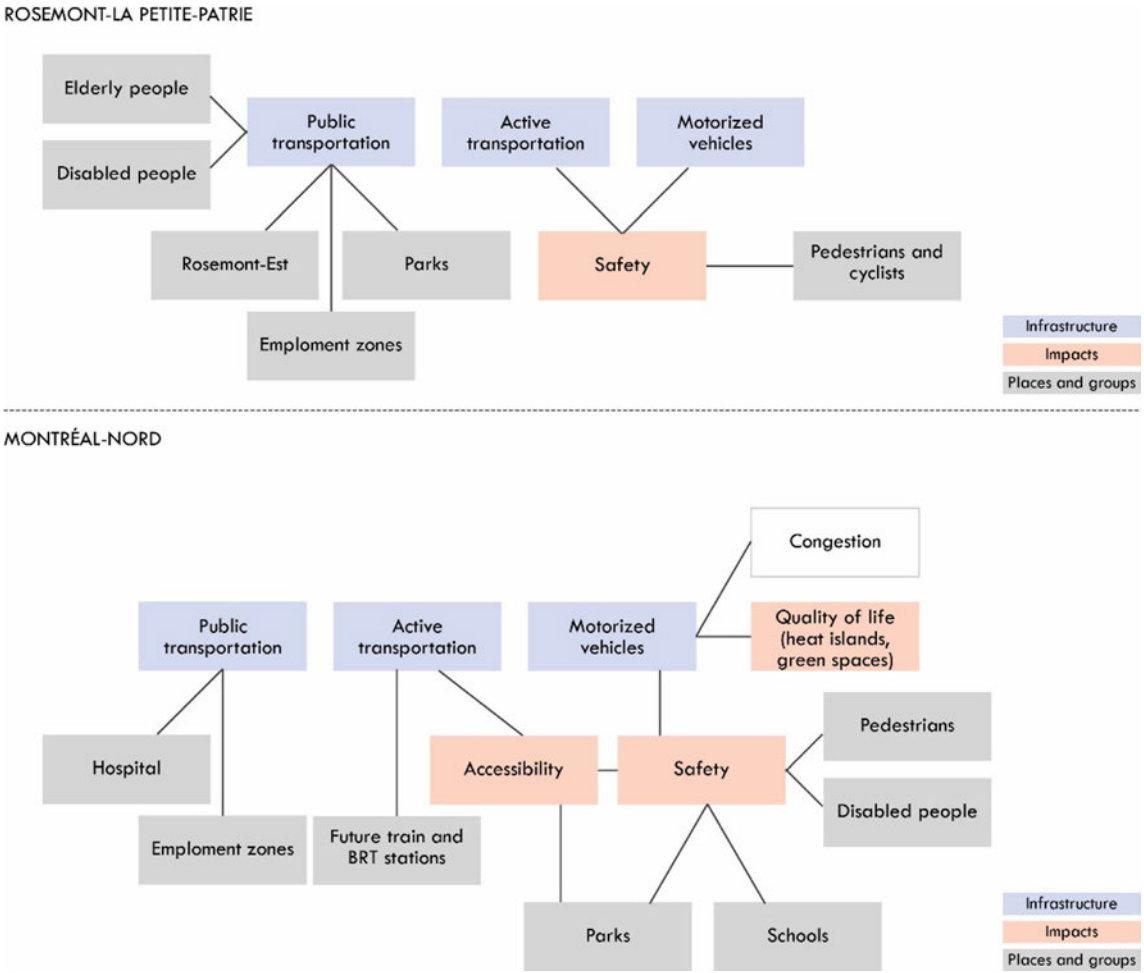

Fig. 3 Tree diagrams illustrating the issues, and their interrelationships, reported from the participatory process in Rosemont-La-Petite-Patrie. And Montréal-Nord

marginalized groups. The issues reported in the documents were not differentiated between socio-economic groups (see Fig. 3) and most issues brought up by the community groups did not come up in the reports of the participatory processes, as discussed above. These findings suggest that the concerns of marginalized groups were not predominant in the participatory processes. Furthermore, issues of involvement in decision-making were not discussed. For example, no citizen or groups requested a greater involvement in decision-making. The issues of involvement are further discussed in the next section, with regard to the quality of the participatory processes.

5.1.3 Paradigm shift: Limited social learning through participation

From a general perspective, the issues and themes discussed in the participatory processes stayed within the traditional planning paradigm, as described by Banister [20]. The focus lay within the physical dimension of transport. The street was solely seen as a road, and the use of public space was not debated by the citizens and planners. In this regard, the outcomes were quite limited in terms of vision. However, some aspects of the sustainable mobility paradigm were integrated in the LTPs. The LTPs are by definition based on a local and participatory approach and thus promoted a greater emphasis on people, compared to conventional transportation planning. Furthermore, the LTPs followed the hierarchy of transport modes of the sustainable mobility paradigm, prioritizing active and public transport over cars. Nevertheless, these aspects came mainly from the design of the planning process itself, rather than from the inputs of the inhabitants.

In terms of social learning, the content analysis of the reports revealed that the participatory process stayed mainly in the single-loop learning phase, which lies in improving the planning process based on the needs of the population (see Fig. 1). The findings reveal that p allowed an improvement of the transportation planning processes in both boroughs, as it contributed to identifying specific transportation issues experienced by citizens. The participatory processes thus provided planners with additional information to develop targeted interventions. However, the process did not enter the double- or

triple-loop phases, which relate to reframing and transforming the process (see Fig. 1). As discussed in the conceptual framework, the double-loop would be characterized by the inclusion of broader social goals, namely accessibility, quality of life, inclusion and social equity. However, while the reports touched upon quality of life, the focus largely remained on identifying transport infrastructures that need to be improved. The findings also suggest that the process did not contribute to reframing transport planning in terms of sustainable mobility, as discussed above. In line with these limitations, the triple-loop learning phase also was not achieved. The overarching role of local transport planning and the potential use of LTPs as social policy tools were not debated. For example, the report did not mention the potential impacts of public transport on unemployment or neighbourhood livability.

5.2 Factors influencing the outcomes of the participatory processes (RQ2)

As the contribution of participation was limited in fostering social learning and paradigm change, this section analyses the factors influencing the outcomes of the participatory process, namely the quality of the process, the local planners' view on transportation planning, and the community groups' view on transportation planning.

5.3 Quality of the participatory process

Based on the framework developed for this study, the quality of the participatory process is determined by the early and representative participation of citizens, the definition of broad boundaries for the process, and the empowerment of citizens throughout the process. The analysis of the documents and of the semi-structured interviews on the way the process was conducted and how it was perceived by community representatives reveals that participation was framed within very specific boundaries, and as a result, was limited in including and empowering the citizens and community groups. The quality of the process was largely influenced by the goals defined by the local planners. According to the local planners, the main objectives of the participatory process were the identification of transportation issues based on the experience of local citizens and the public acceptance of the LTP. Based on these goals, citizens were not directly involved in decision-making, and participation remained within the information and consultation levels (see Fig. 1).

In line with the objectives mentioned above, the boundaries of the process were quite narrow. In both boroughs, the meetings were structured around predefined categories (mainly active and public transport, safety and quality of life, and road network and parking) and questions. The case of Rosemont-La Petite-Patrie illustrates the limited range of themes addressed during the process. For example, the quarter meetings focused on a survey on the transport habits of the citizens and on the identification of problematic intersections on a map. Between others, the participants were asked the following questions:

- What mode of transport did you use to get here today?
- Why did you choose this mode of transport?
- What would encourage you to use another mode of transport?
- In which locations do you feel especially unsafe?

Similarly, the focus groups were mainly directed towards specific questions such as:

- Which intervention would have the greatest impact on car use reduction in the borough?
- What are the main issues affecting the safety of pedestrians and cyclists with regard to road traffic?

Finally, the meeting with the community groups was also characterized by narrow boundaries. Representatives perceived the meeting as a very technical process, as described below:

> "*It was more at the geographic level, [the planners] want to know that this route has a problem because…, it's mainly really in terms of infrastructure, that there we feel unsafe, there is no traffic light there […] it was rather a technical profile rather than a sociological problem*" *(CW2)*

In addition to this, some representatives pointed out that the borough came with a plan already in hand. The plan was presented to the community groups for feedback, but as highlighted by one representative, the priorities and orientations were already set and as a result, it did not allow the community groups and the borough to identify new axes or priorities. Generally speaking, in both boroughs, the meetings with the citizens and community groups evolved around specific, rather technical issues, and did not allow them to be included in the definition of the broader goals and orientations of the LTPs and thus contribute to the essence of the plan.

Following the narrow goals and boundaries, the inclusivity of the process was also limited. In both boroughs, the citizens and the community groups were not included from the beginning of the process and were overall marginally involved. The two settings illustrate how the top-down planning of the participatory process limited the involvement of the citizens and community groups. In the case of Rosemont-La Petite-Patrie, the citizens were consulted by the district towards the end of the LTP diagnostic phase and at the beginning of its intervention plan phase. According to the local planner and the public consultation firm, the local quarter meetings were used as a

validation tool and the focus group was used to explore the acceptance of the different interventions. In this sense, citizens were not given the chance to contribute to the broader definition of the LTP from the beginning. Regarding the community groups, many representatives indicated that they would have liked to be included, or at least to be informed, earlier in the process. In their perspective, they were informed too late about the LTP, and also about the meeting itself, as expressed in the following statement: "*It seems to me that the delay was quite fast, and it was leaving us with not so much time for mobilization.*" (CW4). As a result, the groups had limited time to reflect on the transportation issues experienced by their members and phrase their requests. For example, the Rosemont Citizen Transport Committee, with regular meetings every month, pointed out that the delay did not allow them to discuss the LTP prior to the consultation meeting. In addition to the short delay, the community groups mentioned that the communication and publicity strategy was not adapted to their reality. As highlighted by one of the community workers, "*[the planners] did it by the book […] they didn't find communication lines very sexy for me to go*" (CW1). The general strategy (delay and communication) was brought up as an explanation to the low response of the community groups. It should be noted that only few community groups attended the meeting in Rosemont and no meeting was held in La Petite-Patrie because not enough representatives responded to the invitation sent by the borough. Although the community groups felt that the borough was genuinely interested in consulting them, many of them considered that the participatory process was not adapted to the reality of the community groups and thus failed in successfully involving them. Similarly, in Montreal-Nord, the citizens, and especially the community groups, have not been included at the beginning of the project. The first two phases, the preparatory study and the definition of the goals, were about to be completed when we conducted the interviews. However, only one consultation meeting with citizens had taken place and experts or community groups had not yet been included. As was the case in Rosemont-La Petite-Patrie, the top-down approach did not foster significant involvement of the citizens and community groups until now and limited their contribution to the general definition of the LTP.

Regarding the representativeness of the process in Rosemont-La Petite-Patrie, the planner and the community groups seemed to agree that different social groups participated. However, no systematic analysis was conducted and marginalized groups were not specifically targeted. One representative insisted that the partner for the LTP "*was more Mobiligo, rather than to target organizations that are linked to poverty*" (CW2). Mobiligo conducted surveys with the employees of the major employment centres. The focus appeared to be rather on the business and institutions, "*on the people that are working*" (CW2). Although the borough was open to hear the concerns of the marginalized populations, it did not ensure that all voices were heard. In that sense, another representative (CW1) stated: "*naturally, it's always the same that we don't hear, those who don't speak loud enough, or those who have fewer skills and opportunities to do so*".

Finally, the empowerment of community groups was also very limited in the processes. Very few community groups have been involved after all, and thus very few have been given the opportunity to learn and increase their capacity in relation to transport issues. Besides, the groups that participated in the consultation meeting in Rosemont-La Petite-Patrie emphasized the fact that they were not very well prepared and could not seriously reflect with their members about their transportation needs. They highlighted that they would have needed more resources and more time ahead of the consultation to significantly involve their members in the process. Additionally, the community groups only took part in one short meeting throughout the process. This likely led to limited learning opportunities.

5.3.1 Local planners' view of transportation planning

As discussed in the theoretical background, the sustainable mobility paradigm entails a focus on the needs of individuals and transport-related social issues, rather than on traffic flows and infrastructures. It also brings into play a prioritization of vulnerable users (pedestrians and cyclists), the integration of different modes and the reallocation of road space to other users and uses. Alternative approaches based on scenarios and visioning exercises are also put forward.

The analyses of the interviews suggest that local planners have a traditional understanding of transportation planning, focusing on the technical aspects rather than the social dimension. This perspective followed the planning paradigm of the agglomeration and was likely constrained by the planning context at the borough level.For the local transport planners, transportation planning was mainly understood in terms of trips and modes of transport (cohabitation and diversification). These concerns dominated their discourse with regard to the aims and goals of the LTP. The emphasis was on facilitating the trips of the residents, by improving the infrastructure and reducing conflicts between the different users. In relation to the priorities of the borough for local transportation planning, one local planner explained: "*certainly, the issue is to favour walking trips first […], to favour the use of active transportation […] and also public transport, the busses and the metro, and after that, there is cars and parking*" (LP1). In both boroughs, the hierarchy between the different modes of transport was central, starting with the most vulnerable users (from active to public transport, to private motorized vehicles). However, although active and public transport was favoured, the focus remained mainly on traffic and flows, rather than on the people and on their needs.

The link between social issues and transportation appeared to be somehow unclear to the local planners, and quite marginal in their discourse. In Montreal-Nord, the category *quality of life* was referred to as the social dimension of transportation. This category referred mainly to traffic calming measures that reduce negative externalities of transport. In a broader perspective, the planners did not identify accessibility or social equity as social issues related to the LTP. Coming back to vertical equity, as defined in the theoretical background, there appeared to be no clear criteria for prioritizing some social groups over others. When asked how the borough establishes the priority for the transportation projects, one local planner responded: "*so after all, prioritization is done according to what is realist*" (LP1). In relation to the general objectives of the LTP, he also stated that: "*[their] priorities, it's really from the most vulnerable user to the most protected user*" (LP1), the most vulnerable users being the pedestrians and cyclists. However, as the main focus is on safety, marginalized populations were not identified as vulnerable groups. Only the elderly, the disabled people and the children were implicitly or explicitly identified as disadvantaged groups by the local planers. Yet, other social groups, such as low-income and unemployed people, are also known to be vulnerable with respects to transport issues. Within this context, it is important to note that in both boroughs, planners mentioned that some bigger projects (green corridors for example) were implicitly developed in the more deprived areas. Finally, although both local planners agreed that the current planning did not explicitly address social issues and social equity, they acknowledged the potential relevance of integrating them further in transportation planning: "*maybe we don't tackle the right problem, maybe we should look at the needs of the communities, of the people*" (LP2).

The marginalization of the social issues appeared to stem mainly from the broader planning paradigm in which the local planners evolve. In both boroughs, the LTP was based to a large extent on the general guidelines provided by the agglomeration of Montreal. Both planners emphasized the priorities that were established by the agglomeration as guiding principles for the development of the LTP. Since the social dimension is not explicitly addressed at the agglomeration level and that transportation planning is seen as a partitioned expertise in Montreal [44], local planners who relied largely on the guidelines of the agglomeration had a similarly traditional view on transportation planning. The local planning context appeared to be quite inflexible, with planners themselves recognizing the difficulty of changing the way transport was viewed and planned in the borough.

5.3.2 Community groups' view of transportation planning

The findings suggest that there was a lack of expertise and interest on transportation planning among the local community groups. In both boroughs, there was no organization working specifically with transport issues, and transport was not among the priorities of the community groups, especially not the ones working with marginalized populations. The representatives of the Rosemont Housing Committee and the RTCPP insisted that transport was not among their priorities, and hence they had no information about the transport needs of their members. The representative of the RTCPP pointed out that the LTP did not emerge from a community-driven need, but was an initiative coming from higher administrative levels. With regard to mobilization, community groups have limited time and resources and thus focus on their priorities, as expressed by one representative:

> "*[The mobilization] can come from the community groups, but we don't necessarily, with regard to priorities, to the time we have, well if it's really an issue, we want to prepare it ahead of time, but it's not something we can really do [with regard to transport].*" *(CW2)*

As a result, transport is often "neglected" in the agenda of the community groups. The lack of interest and resources was thus seen, together with the approach of the borough to the participatory process, as a main reason for the low involvement of the community groups.

The impacts of transportation planning at the local level were also unclear for the community groups. Community groups mentioned that they did not understand the role of the Local Transport Plan and how it would affect them. In the same way, one of the local planners described the LTP as "*something that is not intuitive*" (LTP2) for the community. One representative stated that: "*[he] did not, at the beginning, felt concerned by the LTP*" (CW1), although he was involved with some transport projects. This seems to suggest that even the community groups working on transport issues had few requests, and limited interest in participating in the LTP.

5.3.3 Barriers to a paradigm shift in local transportation planning

The analysis of the results highlights the influence of the top-down planning on the quality and outcomes of the participatory processes. To start with, following the traditional vision of the planners, the participatory processes had clear predefined objectives and narrow boundaries. Together with the limited inclusivity of the processes, this led to a low involvement and limited empowerment of the citizens. As emphasized by Handy [21], successful public involvement fosters a broader range of transportation planning goals. In our case, citizens and community groups did not participate in the development of the goals of the LTP and thus did not contribute to broadening the scope of the process. Furthermore, issues of social equity were not explicitly stated as objectives of

the LTP by the local planners. As a result, the planning of the participatory process did not incorporate social equity and led to a low representation of the interests of marginalized groups. Chaskin, Khare [54] argue that the participatory process should ensure the representation of disadvantaged social groups in order to promote social equity. Similarly, Sirianni [67] emphasizes the need for a qualitative stakeholders analysis. Based on an inclusive vision, the analysis aims at identifying and targeting groups with different perspectives. The absence of stakeholder analysis in the case of Montreal revealed the lack of an inclusive vision on the part of the boroughs. The planners did not make sure that the interests of marginalized groups were sufficiently represented, which is a possible reason for the marginalization of some perspectives in the debates. Besides, the methodology of the participatory process needs to be appropriate for all stakeholders, as stated by Hampton [43], and to make use of flexible methods [67]. Our results therefore show that local planners did not specifically address the challenges related to the inclusion of the community groups in the debate.

From a broader perspective, the planning context in which the local planners evolved represents a significant barrier to including the social dimension of transportation planning in the planning process, and meaningfully involving local residents, especially the marginalized groups.

The marginalization of the social dimension by the local planners did not seem to result from an opposition to do so. Local planners appeared to be open to it, but it was rather a question of mentality and habits. To start with, the absence of explicit social goals and indicators at the agglomeration and local levels did not foster the integration of this dimension in the planning. In this regard, Handy [21] views the goals and the larger vision as central to transportation planning, guiding the specific planning targets. Moreover, the results showed that the traditional planning structure at the borough level limits the emergence of new approaches. Local planners identified some technocratic habits that are difficult to overcome. In this regard, Pahl-Wostl [51] refers to the inertia of institutions as a main barrier to change and social learning. In addition, the discipline limitation arising from the broader planning context constitutes a major barrier to the integration of social objectives. As discussed above, in Montreal, the field of transportation planning is viewed mainly as a technical, isolated one, and LTPs are limited to traditional transport issues. Booth and Richardson [25] criticize the isolated policy stance of LTPs "ignoring its relationship with other fields of activity." More generally, Pahl-Wostl [51] identifies sectoral fragmentation as a major barrier to change in governance regimes. This discipline limitation leaves out the potential to integrate broader interrelated issues within this process, such as social inclusion, land-use planning and neighbourhood democracy.

With regard to public involvement, Booth and Richardson [25] refer to the organizational culture as a major barrier to successfully involve citizens into transportation planning. They identify the traditionally expert-driven process as a factor for the marginalization of participation. This is coherent with the case of Montreal, in which transportation planning is mainly driven by engineers and transport expert consultants and participation is a supplement to the LTP planning process.

To a lesser extent, the lack of expertise and interest of the community groups was identified as a barrier that hinders the quality of participation. Avelino and Rotmans [68] identify the access to resources and the willingness to use them as major conditions for mobilization. In our case, the analysis of the results showed that local transportation planning was not of significant interest for most of the community groups and revealed a lack of motivation to proactively get involved in the participatory process and in transportation planning in general. Additionally, the lack of resources (time and skills or expertise) limited their participation.

5.4 Opportunities to trigger change through participation

Drawing on critical urban theory [69], it is essential to look at the opportunities within the current planning context in Montreal to foster alternative planning processes. This section looks at favourable factors from both top-down and bottom-up perspectives and formulates recommendations to take advantage of these opportunities to foster changes.

5.4.1 Political will

In both boroughs, there seemed to be a consensus that changes were more likely to come from the politicians and the administration, than from a bottom-up movement. The local planners and community groups identified political will as the key factor for initiating a LTP and prioritizing active and public transport. The need for a LTP did not arise from the community, as mentioned above, but rather from a top-down strategy, starting at the agglomeration level. Also with regard to the involvement of community groups, one representative asserted that: "*it would rather be the responsibility of the borough*" (CW2) to include the community groups in the process.

Regarding the local political context, it was seen as favourable to a shift towards active and public transport, especially in Rosemont-La Petite-Patrie. In general, the borough was open to new approaches and showed a strong will to become a "greener" borough. In relation to the green initiatives, one representative described the borough's interest as follows:

> "*so it's good marketing for them, namely for their [political] platform that is very green, […] Projet Montréal*

> [municipal political party in power in the borough] *is very very green, is very much in sustainable development, so it's a good showcase for them.*" *(CW3)*

Beyond the environmental incentives for active and public transport, both boroughs perceived efficient public transport as an advantage to attract qualified labor. They both conducted extensive surveys on mobility around the main employment centres. With regard to the survey conducted around health centres, LP2 emphasized that it was important to reflect on what needed to be done in terms of public transport "*to attract doctors, nurses and health specialists so that they come and work [in the borough].*" Similarly, the Société de Dévelopement Angus highlighted that transport was a key selling point for attracting new businesses in the borough and in that sense, the Société de Développement Angus, which represents many businesses and employees, had a strong leverage with the administration.

From a top-down perspective, there is thus a significant political and economic motivation for the local politicians and administration to support the development of an efficient and active public transport network. Although this is coherent with the sustainable mobility paradigm, it does not imply that the social needs are prioritized over economic or environmental incentives, or that the needs of marginalized groups are taken into account in order to promote social equity. It is thus also essential to look at the potential contribution of the community groups.

5.4.2 Mobilization of the community groups

An interesting insight from this study is the discrepancy between the issues identified through interviews with the community groups, and the issues revealed in the participatory processes (section 6.1). The interviews with the community groups allowed uncovering specific social needs that were not addressed in the participatory processes. The findings thus suggest that community groups can be an appropriate vehicle for addressing the social dimension of transport and representing marginalized populations.

The interviews also revealed that the mobilization of the community groups could be fostered if the link between transport and the interests of marginalized groups was made clearer, especially with regard to employment. The representatives of *démarche-action-RUI* pointed out that the most efficient way to reach marginalized populations was by putting forward the importance of public transport in accessing jobs and services. Besides, although most of the interviewees had not made a reflection on the transport needs of their members, the process initiated a reflection for many of them. To start with, the LTP process itself raised awareness among some community groups. One representative mentioned that the LTP "*forces [them] to think, and to consult [their] members*" (CW4). Additionally, it was observed that the interviews allowed representatives to reflect more deeply on the social issues related to transport. Accordingly, there is a potential through in-depth discussions, to foster the interests of some community groups on local transportation planning.

Finally, the strong tradition of citizen participation through community groups, especially in Rosemont-La Petite-Patrie, was perceived as an opportunity to build on. Although the contribution of the community groups was limited in the case of transportation planning, community groups generally have the potential to represent marginalized groups. As mentioned by two representatives in Rosemont-La Petite-Patrie, it is in the mentality of the community groups to give a voice to their members. In relation to citizen participation, one representative stated: "*The big difference, it's really on the side of the community workers, I mean, everyone is willing for projects*" (CW1). There also seemed to be a consensus on the development of active and public transport, as emphasized here:

> "*I think there is a consensus in Rosemont that we want to go green, and that we want to go towards new ways of working with the pedestrian. That's what I feel with regard to the organizations and the population. So, these kinds of initiatives are welcome and, after all, they are the pride of the quarter.*" *(CW3)*

In Montreal-Nord, although the general community context was less favourable, there were many community groups representing low-income residents and marginalized populations. Overall, community groups present a substantial potential to steer transportation planning towards more equitable and sustainable goals if meaningfully involved.

5.4.3 Building on opportunities: The need for improved participation

From a top-down perspective, the initiated participatory process, although limited in its contribution, represents a unique window of opportunity towards more significant changes. Regarding the bottom-up approaches, the community groups are relevant actors to represent the interests of marginalized populations and the community context is a favourable ground for including them further.

Interventions are, however, needed to take advantage of the current opportunities and thus bring the participatory process further in terms of social learning. The following actions are therefore recommended:

- Including clear social equity goals at the agglomeration level to provide local planners with guidelines;
- Assisting the process of social learning with facilitators to engage stakeholders with transportation-related social issues;

- Providing community groups with resources to meaningfully take part in participatory processes.

From the beginning, it is essential to include and define clear social equity goals at the agglomeration level. As emphasized by Handy [21], goals are central to the definition of more specific objectives in transportation planning. In this case study, it has been shown that the boroughs are strongly influenced by the guidelines provided by the agglomeration. The inclusion of the social dimension at the agglomeration level is therefore very likely to have an influence at the borough level.

The local participatory processes emerging from the LTPs constitute a first step towards a broader involvement of citizens in transportation planning. Described as a reinforcing loop between planners and citizens, involvement arises from a dialogue between the two parties [53]. The results showed that the LTPs opened the communication between the citizens and the planners and triggered interest among some community groups. Further exchanges are, however, essential for greater involvement and greater learning. In this regard, the continuity of the process defined by Bickerstaff, Tolley [52] as the ongoing participation throughout and after the development of the LTP is central to social learning. Building on the framework for social learning through participation (Fig. 1), Fig. 4 illustrates how the combination of bottom-up and top-down approaches can lead to a greater involvement of citizens in decision-making. Both bottom-up and top-down processes are necessary to reach higher levels of social learning, as highlighted by Pahl-Wostl [51]. Planners and community groups' actions can gradually reinforce each other towards the inclusion of community groups in planning processes (Fig. 4). In our case study, the process stayed within the first steps of initiating the process and rising awareness among community groups.

It is hence essential to resort to a facilitator to bring the process further and foster social learning towards the inclusion of the social dimension in transportation planning. With regard to the facilitator, Pahl-Wostl [51] identifies the roles of boundary spanner and knowledge broker as necessary to overcome the single-learning loop. The inclusion of a broader range of issues requires diverse disciplinary and sectoral perspectives to engage with the topic of transportation planning. The facilitator must ensure the integration and collaboration of different disciplines, outside the realm of technical planning. Furthermore, the facilitation process has the potential to "maintain the orientation" towards the social goals identified above [70]. The facilitator must allow planners and citizens to develop a better understanding of the social implications of transportation planning and the impacts of a LTP. In that sense, the results show the potential for community groups to engage deeper in the topic, with appropriate guidance. Between others, the facilitator could be someone from the municipality, ideally with a multidisciplinary perspective, who is willing to take up the issue. It could also be a representative from one of the regional non-governmental organizations specialized in transport and citizen participation.

Even in the presence of a facilitator and clear social goals, social equity remains a challenge in participatory planning. As indicated by Chaskin, Khare [54], participation at the local level presents significant challenges for representing low-income residents. Although change in local transportation planning is unlikely to be triggered by the community, the contribution of community groups is essential from a social equity perspective. As shown in the previous section, it seems appropriate to identify community groups to represent marginalized populations in the borough. It is, however, argued that groups must be provided with resources and expertise to allow them to participate effectively in the process [43, 54, 67]. It is thus essential to provide groups representing marginalized populations with enough resources so that they can meaningfully get involved in the process, and thus promote social equity of the outcomes of participation.

6 Discussion and conclusion

This study has examined the contribution of the LTP participatory processes in Montreal in broadening the scope and objectives of local transport planning. While LTPs are in the first place a transport planning tool, the literature has shown that local transport planning can play a key role in achieving broader objectives. Namely, social inclusion can be facilitated by ensuring a greater access to opportunities through public transport services and neighbourhood livability can be improved through specific transport interventions. Furthermore, social equity can be improved by including all residents in the decision-making process. Our findings suggest that the participation of community groups can contribute to targeting these transport-related social issues, especially with respect to accessibility to opportunities. Yet, while a broadening of the scope of LTP is desirable for a change of paradigm, it is important to note that not all social issues can and should be addressed through local transportation planning.

We also examined the barriers and opportunities for including the social dimension of transportation planning through participation in Montreal, as a result of social learning. The results highlighted the limited contribution of the participation of local communities and community groups in the development of LTPs. Based on the social learning framework, a reduced involvement of relevant local stakeholders constrained the participatory process to remain within the single-loop learning phase and limited the ability of the planning process for solving key social issues in urban transportation planning. The overarching traditional planning paradigms, as well as the local organizational culture of the

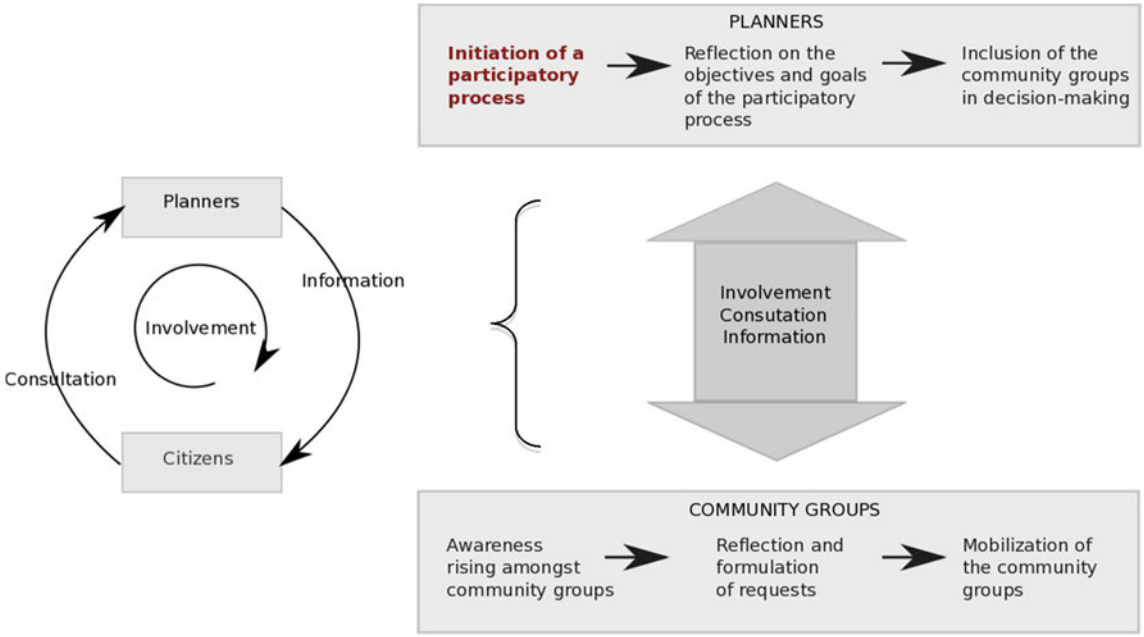

Fig. 4 Combined top-down and bottom-up process leading to greater involvement of the community groups. The initiation of the participatory process by the planners, in red, is perceived as the triggering element. The figure was created by the authors

boroughs were identified as the major barriers to achieve higher levels of learning. Local planners stayed within a technical perspective, based on a sectoral and discipline fragmentation. Communities did not perceive transport as a central issue and therefore did not see the need for becoming significantly involved in the process. Changes are likely to come from a combination of top-down and bottom-up actions, initiated by the agglomeration through the LTPs. In order to take advantage of this opportunity and to foster social learning, participatory processes should follow clear social goals established at the agglomeration level, with the help of skilled facilitators. Additionally, community groups should be provided with resources to promote social equity of the process and outcomes. Finally, participatory approaches, which are receiving increasing attention in transportation planning, provide planners with new tools to address the social dimension of transport, but further steps are required to foster an equitable and sustainable transportation system.

The framework for social learning through participation provides insights on the relationship between the quality of local participatory processes and their contribution to social learning and a shift in paradigm on socially responsive transportation planning. Features of participation as well as interventions to foster social learning are identified based on the given conceptualization of change. Further investigations need to be conducted in different settings, building on the developed framework and recommendations, to gain a deeper understanding of the mechanisms of local participation and social change.

The challenges identified in this study are not unique to the case of Montreal. The inclusion of social equity and inclusion goals in local transport planning remains limited in other contexts. For example, in the UK, although the federal government has set up a transport and social exclusion agenda to be taken up by all levels of governments, a recent study suggested that transport-related social exclusion is poorly considered by local transport authorities and in local transport plans [1]. Similarly, metropolitan transportation plans around the world are still dominated by mobility indicators, although they increasingly incorporate access-to-destination goals [22, 71]. The insights gained from this study provide recommendations on how participatory processes can be improved to contribute to broadening the scope of LTPs in Montreal. While the recommendations are based on the specific case of Montreal, other metropolitan areas characterized by a similar context can benefit from these recommendations. Namely, these recommendations are most useful for metropolitan areas where local participatory approaches are put forward, but where traditionally planning approaches are still strongly rooted in practice. Moreover, other contexts with a strong tradition of community organizations can gain from the specific recommendations of this study.

Acknowledgements The authors first want to thank all the interviewees who volunteered their time for this study. Thank you also to Turaj Faran and Henner Busch for their many insights on this study and to Dea van Lierop for providing valuable comments on the paper. Lastly, we would like to thank the two anonymous reviewers for their critical review of the paper.

Appendix 1

Table 3 Demographic and mobility statistics for the two boroughs and the agglomeration of Montreal

	Montreal-Nord	Rosemont-La Petite-Patrie	Agglomeration of Montreal
Geographic and demographic data			
Area (km^2)	11.1	15.9	499.1
Population	83,868	134,038	1,886,481
Unemployment rate (%)	14.1	8.8	10.0 *
Population above 15 years old with a university degree (%)	9.7	31.3	28.1 *
Immigrant population (%)	37.6	21.8	33.4 *
Mobility data			
Car ownership (number of car per household)	0.88	0.73	0.96
Private car (modal share in %)	54.3	48.1	56.1
Public transport (modal share in %)	26.5	30.2	25.4
Active transportation (modal share in %)	17.0	21.2	17.1

Demographic data Montréal en statistiques, 2013; Ville de Montréal, 2012. *Mobility data* Agence métropolitaine de transport de Montréal, 2008

*Data for the City of Montreal only, not for the whole agglomeration

Appendix 2

Table 4 List of the documents used to analyse the outcomes of the participatory process. The documents were provided by the local planners. The reports of the local quarter meetings and the citizen focus group in Rosemont-La Petite-Patrie can be found online at www.plandedeplacementrpp.com/

Montreal-Nord	Rosemont-La Petite-Patrie
- Report of the consultation meeting with the citizens	- Report of the local quarter meetings
	- Report of the citizen focus group
	- Report of the meeting with the community groups
	- *PowerPoint* presentations used for the focus group and the meeting with the community groups
	- Report of the local quarter meetings

Appendix 3

Table 5 Local planners and community groups represented in formal and informal interviews for each borough. For Rosemont-La Petite-Patrie, the community groups in bold are the ones that attended the consultation meeting of the LTP

	Montreal-Nord	Rosemont-La Petite-Patrie
Planners	Local planner in charge of the LTP	Local planner in charge of the LTP
		Public consultation firm
Community groups	*Démarche-action RUI* (integrated urban revitalization zone program)	Rosemont Community Development Corporation
		Rosemont Citizen Transport Committee*
		Tandem (urban safety)
		Carrefour Montrose (elderly people)
		Société de développement Angus (urban renewal)
		Rosemont Housing Committee
		La Maisonnée (resources for immigrants)
		RTCPP (inter-sectoral discussion forum)

*The Rosemont Citizen Transport Committee was represented by the representative of the Rosemont Community Development Corporation, which is also in charge of the Rosemont Citizen Transport Committee

References

1. Lucas K (2012) Transport and social exclusion: where are we now? Transp Policy 20:107–115
2. Boschmann E, Kwan M (2008) Toward socially sustainable urban transportation: progress and potentials. Int J Sustainable Transp 2(3):138–157
3. Kawabata M (2003) Job access and employment among low-skilled autoless workers in US metropolitan areas. Environ Plan A 35(9):1651–1668
4. Sanchez T (1999) The connection between public transit and employment: the cases of Portland and Atlanta. J Am Plan Assoc 65(3):284–296
5. Tyndall J (2015) Waiting for the R train: public transportation and employment. Urban Stud, p 0042098015594079
6. Hart J, Parkhurst G (2011) Driven to excess: impacts of motor vehicles on the quality of life of residents of three streets in Bristol UK. World Transp Policy Prac 17(2):12–30
7. Wallström M (2007) Reclaiming city streets for people: chaos or quality of life. Directorate-General for the Environment, European Commission, Luxembourg
8. Morency P et al (2012) Neighborhood social inequalities in road traffic injuries: the influence of traffic volume and road design. Am J Public Health 102(6):1112–1119
9. Dratva J et al (2010) Impact of road traffic noise annoyance on health-related quality of life: results from a population-based study. Qual Life Res 19(1):37–46
10. Dodson J et al (2006) Investigating the social dimensions of transport disadvantage—I. Towards new concepts and methods 1. Urban Policy Res 24(4):433–453
11. Carrier M et al (2014) The application of three methods to measure the statistical association between different social groups and the concentration of air pollutants in Montreal: a case of environmental equity. Transp Res Part D: Transp Environ 30:38–52
12. Kingham S, Pearce J, Zawar-Reza P (2007) Driven to injustice? Environmental justice and vehicle pollution in Christchurch, New Zealand. Transp Res Part D: Transp Environ 12(4):254–263
13. Lucas K, Jones P (2012) Social impacts and equity issues in transport: an introduction. J Transp Geogr 21:1–3
14. Currie G et al (2009) Investigating links between transport disadvantage, social exclusion and well-being in Melbourne-preliminary results. Transp Policy 16(3):97–105
15. Stanley J, Lucas K (2008) Social exclusion: what can public transport offer? Res Transp Econ 22(1):36–40
16. Preston J (2009) Epilogue: transport policy and social exclusion—some reflections. Transp Policy 16(3):140–142
17. Chardonnel S, Scherrer F, Scherrer F (2012) La prise en compte des inégalités socio-spatiales dans les politiques de mobilité: Vers de nouvelles catégories de pensée et d'action. VertigO Hors-série 11 | mai 2012. URL: http://vertigo.revues.org/11738; doi:10.4000/vertigo.11738
18. Geurs K, Boon W, van Wee B (2009) Social impacts of transport: literature review and the state of the practice of transport appraisal in the Netherlands and the United Kingdom. Transp Rev 29(1):69–90
19. Manaugh K, Badami M, El-Geneidy A (2015) Integrating social equity into urban transportation planning: a critical evaluation of equity objectives and measures in transportation plans in North America. Transp Policy 37:167–176
20. Banister D (2008) The sustainable mobility paradigm. Transp Policy 15(2):73–80
21. Handy S (2008) Regional transportation planning in the US: an examination of changes in technical aspects of the planning process in response to changing goals. Transp Policy 15(2):113–126
22. Proffitt D, Bartholomew K, Ewing R, & Miller H (2015) Accessibility planning in american metropolitan areas: Are we there yet? Paper presented at the Transportation Research Board 94th Annual meeting, Washington, D.C
23. Koglin, T., *Vélomobility: A critical analysis of planning and space, in Department of Technology and Society*. 2013, Lund University: Lund, Sweden
24. Bertolini L, Le Clercq F, Straatemeier T (2008) Urban transportation planning in transition. Transp Policy 15(2):69–72
25. Booth C, Richardson T (2001) Placing the public in integrated transport planning. Transp Policy 8(2):141–149
26. Hodgson F, Turner J (2003) Participation not consumption: the need for new participatory practices to address transport and social exclusion. Transp Policy 10(4):265–272
27. Elvy J (2014) Public participation in transport planning amongst the socially excluded: an analysis of 3rd generation local transport plans. Case Stud Transp Policy 2(2):41–49
28. Hull A (2008) Policy integration: what will it take to achieve more sustainable transport solutions in cities? Transp Policy 15(2):94–103
29. Jeon C, Amekudzi A, Guensler R (2013) Sustainability assessment at the transportation planning level: performance measures and indexes. Transp Policy 25:10–21
30. Zheng J et al (2013) Guidelines on developing performance metrics for evaluating transportation sustainability. Res Transp Bus Manag 7:4–13
31. Geurs K, van Wee B (2004) Accessibility evaluation of land-use and transport strategies: review and research directions. J Transp Geogr 12(2):127–140
32. Litman T (2017) Developing indicators for comprehensive and sustainable transport planning. Transp Res Rec: J Transp Res Board 2007:10–15
33. Hansen W (1959) How accessibility shapes land use. J Am Inst Plann 25(2):73–76
34. Levine J, Garb Y (2002) Congestion pricing's conditional promise: promotion of accessibility or mobility? Transp Policy 9(3):179–188
35. Denmark D (1998) The outsiders: planning and transport disadvantage. J Plan Educ Res 17(3):231–245
36. Currie G (2010) Quantifying spatial gaps in public transport supply based on social needs. J Transp Geogr 18(1):31–41
37. Foth N, Manaugh K, El-Geneidy A (2013) Towards equitable transit: examining transit accessibility and social need in Toronto, Canada, 1996-2006. J Transp Geogr 29:1–10
38. Pereira RHM, Schwanen T & Banister D (2017) Distributive justice and equity in transportation, Trans Rev 37(2):170-191, doi:10.1080/01441647.2016.1257660
39. Preston J, Rajé F (2007) Accessibility, mobility and transport-related social exclusion. J Transp Geogr 15:151–160
40. Banister D, Hickman R (2006) How to design a more sustainable and fairer built environment: Transport and communications. Paper presented at the IEE Proceedings-Intelligent Transport Systems, vol. 153. No.4 pp.267-291
41. Jain J, Guiver J (2001) Turning the car inside out: transport, equity and environment. Soc Policy Admin 35(5):569–586
42. Purcell M (2002) Excavating Lefebvre: the right to the city and its urban politics of the inhabitant. GeoJournal 58(2–3):99–108

43. Hampton G (1999) Environmental equity and public participation. Policy Sci 32(2):163–174
44. Manaugh, K. and A. El-Geneidy, *Who benefits from new transportation infrastructure? Using accessibility measures to evaluate social equity in transit provision*, in *Accessibility and Transport Planning: Challenges for Europe and North America*, K. Geurs, K. Krizek, and A. Reggiani, Editors. 2012, Edward Elgar: London, UK p 211-227
45. El-Geneidy A et al (2015) Non-stop equity: assessing daily intersections between transit accessibility and social disparity across the greater Toronto and Hamilton area. Environ Plann B Plann Design 2016 43(3):540–560
46. Martens K, Golub A, Robinson G (2012) A justice-theoretic approach to the distribution of transportation benefits: implications for transportation planning practice in the United States. Transp Res Part A-Policy Pract 46(4):684–695
47. Lucas K, Wee B, Maat K (2016) A method to evaluate equitable accessibility: combining ethical theories and accessibility-based approaches. Transportation 43(3):473–490
48. Gil A, Calado H, Bentz J (2011) Public participation in municipal transport planning processes–the case of the sustainable mobility plan of Ponta Delgada, Azores, *Portugal*. J Transp Geogr 19(6): 1309–1319
49. Lucas K (2006) Providing transport for social inclusion within a framework for environmental justice in the UK. Transp Res Part Policy Pract 40(10):801–809
50. Reed M et al (2010) What is social learning? Ecol Soc 15(4):r1
51. Pahl-Wostl C (2009) A conceptual framework for analysing adaptive capacity and multi-level learning processes in resource governance regimes. Glob Environ Chang 19(3):354–365
52. Bickerstaff K, Tolley R, Walker G (2002) Transport planning and participation: the rhetoric and realities of public involvement. J Transp Geogr 10(1):61–73
53. Ridder D, Pahl-Wostl C (2005) Participatory integrated assessment in local level planning. Reg Environ Chang 5(4):188–196
54. Chaskin R, Khare A, Joseph M (2012) Participation, deliberation, and decision making: the dynamics of inclusion and exclusion in mixed-income developments. Urban Aff Rev 48(6):863–906
55. Fortin M (2010) Fondements et étapes du processus de recherche, 2nd ed. Chenelière Éducation Inc, Canada
56. Silverman D (2013) Doing qualitative research: A practical handbook. SAGE Publications Limited, London
57. Paulhiac F, Kaufmann V (2006) Transports urbains à Montréal: Évolutions des référentiels et enjeux d'une politique durable. Revue d'Économie Régionale & Urbaine 1:49–80
58. Société de Transport de Montréal (STM), *Plan stratégique 2020*. 2012: Montreal.
59. Paulhiac F (2004) Mobilités urbaines à Montréal: Du renouvellement de l'action publique à la pérennité du référentiel techniciste. Retrieved from https://infoscience.epfl.ch/record/114252/files/CahierLaSUR06_montreal.pdf
60. Ville de Montréal (2008) Montreal Transportation Plan URL: http://ville.montreal.qc.ca/pls/portal/docs/PAGE/TRANSPORTS_FR/MEDIA/DOCUMENTS/TRANSPORTATION%20PLAN%202008_COM.PDF
61. Agence Métropolitaine de Montréal (AMT) (2008) 2008 origin-destination survey. Montreal, Agence Métropolitaine de Montréal (AMT), Editor https://amt.qc.ca/Media/Default/pdf/section8/resume-des-faits-saillants-de-l-enquete.pdf
62. Décider Rosemont Ensemble (2012) Portrait du quartier Rosemont. Montreal http://www.cdcrosemont.org/PDF/Portrait%20du%20quartier%20Rosemont.pdf
63. Hsieh H, Shannon S (2005) Three approaches to qualitative content analysis. Qual Health Res 15(9):1277–1288
64. Gomm R (2008) Social research methodology: A critical introduction. New York, US: Palgrave Macmillan
65. Mayring, P., *Qualitative content analysis: Theoretical foundation, basic procedures and software solution.* 2014, GESIS – Leibniz Institute for the Social Sciences
66. van Lierop D, Maat K, El-Geneidy A (2017) Talking TOD: learning about transit-oriented development in the United States, Canada, and the Netherlands. J Urban Int Res Placemaking Urban Sustain 10(1):49–62
67. Sirianni C (2007) Neighborhood planning as collaborative democratic design: the case of seattle. J Am Plan Assoc 73(4):373–387
68. Avelino F, Rotmans J (2009) Power in transition: an interdisciplinary framework to study power in relation to structural change. Eur J Soc Theory 12(4):543–569
69. Brenner N (2009) What is critical urban theory? City 13(2–3):198–207
70. Pohl C, Hadorn G (2008) Methodological challenges of transdisciplinary research. Nat Sci.Soc 16(2):111–121
71. Boisjoly G, El-Geneidy A (2017) How to get there? A critical assessment of accessibility objectives and indicators in metropolitan transportation plans. Transp Policy 55:38–50