

Accessibility measures for public transit networks redesign

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Abstract

Accessibility measures for public transit networks redesign

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The planning process of transportation projects may follow two approaches: mobility or accessibility. The first one aims to solve the mobility needs caused by the current land use pattern, while the second one focuses on the opportunities that the transportation system may provide. A bus network redesign was proposed for the city of San José, Costa Rica, but the project was planned with a mobility and efficiency approach, instead of the accessibility one.

The goal of this Thesis is to determine the accessibility level that the bus network redesign will bring to the population of the city of San José. This research utilized employment, healthcare, recreation and universities statistics (opportunities), the streets network, current and future (planned) transit data, and the region's census data spatially distributed. Opensource package R5R was used in RStudio to compute cumulative opportunities to the different opportunities in San José.

It was found that with the implementation of the network redesign as it has been designed it will bring a reduction of 5% in the accessibility measures on average (for employment), nevertheless by making some changes in the frequencies of the routes to keep the fleet size in the same number, it is possible to achieve an increase of 1.3%. The other opportunities (universities, recreation and healthcare facilities also had positive outcomes).

This research is of importance for the different local government entities in Costa Rica and the Ministry of Public Works and Transportation, so they can know the accessibility impact of the project, and whether it is worth implementing it or not.

Key words: public transit, accessibility, network redesign, land use, R5R.

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Dedication

This thesis and my master's degree is dedicated to my family who has always supported me and encouraged me to pursue the best version of myself: my mother Jacqueline, my father Jhonny and my sister Alison.

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Introduction

Background

The typical transportation planning process of a city follows either of two approaches: mobility or accessibility (Handy, 2019). The mobility approach aims to solve the travel needs to reach a destination while dealing with the current land use patterns, while the accessibility concentrates on maximizing the number of potential opportunities reachable within a given travel time (Hansen, 1959), and it focuses on accomplishing reasonable travel time to reach the wide range of opportunities that the transportation system may provide to the citizens.

The accessibility approach has been gaining territory recently (Handy, 2019), for example, it has been used to evaluate major transit projects built upon subways, commuter trains, light rails, BRT, and trams that require significant financial investments. Also, it has been used for social equity analysis (Conesa, 2018; Niehaus et al., 2016; Busby, 2004; Ducas, 2011; Lee and Jin, 2020; Wang et al., 2021). Nonetheless, the accessibility approach has not been used to guide the redesign of a public transportation system, which is typically appraised by considering the mobility, efficiency and social benefits indicators (Mohammed et al., 2014; Chen et al., 2020; Amiripour et al., 2014; Pattnaik et al., 1998; Fan and Machemehl, 2006; Situ and Karner, 2025).

The San José Great Metropolitan Area (GMA) has approximately 2.5 million inhabitants (about twice the population of Hawaii), while the city of San José (excluding nearby cities of Alajuela, Heredia and Cartago) reaches 1.5 million inhabitants (INEC, 2022). Although there are no official statistics of transit usage in San José GMA, according to ARESEP (2022) 46% of the population use transit in the country. San José is a valley city, with most of the urbanized areas in the plain zones, while the edges of the city are less urbanized mountains surrounding the valley. The GMA is a very rainy region, with 2,000 mm of rain annually (Fallas and Valverde, 2009); which has forced the transit system to have a very high spatial distribution to reduce the walking distances from bus stops to the destinations.

The Ministry of Public Works and Transportation of Costa Rica (MOPT, 2024a-c, 2023a-i) developed plans to redesign the bus network in the city of San José to improve the transit service in the city. The plan was originally proposed by LCR Logística (1999) using the mobility approach, and the Ministry has been updating and trying to implement it since 1999.

The project divided the city in 12 zones (a central zone matching the city downtown core, and 11 peripheral zones, composed of multiple feeder routes connected to a trunk route which arrived into the central zone), currently the city has a radial system (a network of independent and not articulated routes whose purpose is to reach the downtown core), where more than 250 routes have their final stop in downtown San José, while the new system proposes a trunk-feeder network, where each zone has main routes connecting downtown, and more feeder routes joining the neighborhoods to the main routes. However, the new system may experience challenges and

opposition given the need to transfer between feeders and trunk routes which among others have provoked a significant barrier for the Ministry of Transport on implementing the network redesign for more than 25 years. They have made multiple studies proving the benefits of its execution, but none of them has used the accessibility approach to justify the project. These studies focus on the improvement of frequencies, OD matrix analysis, SWOT analysis and the last version of the project focused on efficiency by reducing the fleet size while the frequencies were kept the same, none of the studies have used the supply of land use criteria to assess the system redesign.

This research uses the accessibility approach to assess the bus network redesign proposed by the MOPT for San José. Cumulative opportunities (Geurs and Van Wee, 2004) to jobs, recreational activities, higher education (universities) and healthcare facilities are used as accessibility measures to evaluate the project.

Problem Statement

Multiple attempts have been made to accomplish the reorganization of the public transportation system for San José's city. All of them have been planned over the basis of the mobility approach only, and this has failed to consider the effectiveness of the system to maximize the accessibility of the population to opportunities such as employment, health and education, and to the stock of land uses that promote a more equitable life including recreation leisure, shopping, religious, to mention a few.

Research Objective

Overall Goal

The overall goal of this research is to propose an approach to evaluate the redesign of a public Transportation system by considering the accessibility to opportunities including jobs, recreation, education and healthcare. A case study is used to illustrate the approach for the city of San José to demonstrate the benefits of the proposed approach.

Specific Goals

1. Prepare the necessary data to run an accessibility analysis for local opportunities.
2. Study the principles behind successful redesign of the operational schemes supporting Public Transportation.
3. Implement the accessibility approach to guide the optimization behind the redesign of a Public Transport System.

Research Tasks: Two tasks were identified to address the main goal of this research:

Task 1: Data preparation.

To prepare the GTFS data for the transit systems to be compared, this task was essential to the research because the transit data is the main input for the analysis, also it is important to dedicate time to its preparation because Costa Rica's transit authorities and companies do not have this information, and since the pandemic in 2020 there has been a gap between the authorities required schedules and the ones actually offered by the companies, so information from different sources had to be gathered to have the full current schedule of all the routes.

The second dataset to be prepared was the job data, Costa Rica does not have this information as detailed as needed, so the land use layer was extracted from Open Street Map (2025), and different ratios of employment/squared meter were applied from other countries (Ministry of Transportation of Qatar, 2022; TRICS, 2025; Transportation Group New Zealand, 2017). The recreation, universities and healthcare facilities datasets will be extracted from Open Street Map (2025). Finally, the census geographic information was obtained from INEC (2022) and the streets network from Open Street Map (2025).

Task 2: Accessibility analysis

The accessibility analysis was made using the package R5R in RStudio as explained by Pereira et al. (2021), this tool allows to compute the time travel matrix in a faster way than other software, once this matrix is obtained the cumulative opportunities (jobs and others) can be calculated by different time travel thresholds, and compared for different scenarios.

Scope and Limitations

The scope of this research is to apply the accessibility approach to evaluate a bus network redesign, by measuring the cumulative number of job opportunities, recreational land uses, universities and healthcare facilities in 60 minutes of travel time. It is limited to bus routes and commuter rail as the country does not count with Metro, Tram or BRT. The transit data used for the current system comes from the transit authorities (CTP, 2024) and is complemented with the open data of the public services regulator (ARESEP, 2025). For the proposed system the transit schedules designed by MOPT (2024a-c, 2023a-i) were utilized. Employment data were estimated using ratios of employment per gross floor area (squared meter) through trip generation rates developed by other countries (Ministry of Transportation of Qatar, 2022; TRICS, 2025; Transportation Group New Zealand, 2017), given that Costa Rica does not have this information. The datasets for recreation, universities and healthcare facilities were obtained from Open Street Map (2025) and validated by the author's knowledge of the local land uses context. The walking network was obtained from Open Street Map and the census spatial information from the local government entity responsible for the census.

The navigation network used in this research relies on the travel time matrix and traffic conditions registered on Open Street Map and estimated using the package R5R in RStudio, which could differ from reality if the travel conditions are abnormal as affected by possibly road collisions, road constructions, road closures, changes in signals timing, impact of weather on travel demand, and any other abnormal events that might have occurred, for this reason the selection of the day and time should be such that the most common typical day is selected.

Hence the results are subject to the routing algorithm, and the accessibility measures will be computed only for the peak hour for the city defined from 6:15 am to 7:15 am (LCR Logística, 2007).

The accessibility approach does not acknowledge that the service will satisfy the demand required by the population, this component must be done in the design of the routes and schedules, and this research uses as an assumption that the design made by the Ministry has already met this requirement. The accessibility approach tells whether a change in the system improves or decreases the benefits for the users from a land use point of view. The analysis made in this research supposes that the land use pattern will not change after the change in the network, so the opportunities will remain the same for both scenarios.

Research Significance

This research makes the following contributions:

- It establishes the ground for evaluating transit network redesigns using an accessibility approach.
- It increases the wide range of analysis that can be done in the accessibility research line, going further than big investment projects.
- It presents an approach for assessing network redesigns, adding an important component often disregarded.

Organization of the Thesis

This research is composed of 6 chapters. It starts with the introduction as chapter 1, where the problem is established, the goals and scope are delimited, as well as the tasks and its research significance. Chapter 2 is a thorough literature review of other studies that have used the accessibility approach for assessing transit projects, as well as of the methodologies that have proven to be adequate to evaluate transit network redesigns. Chapter 3 presents the description of the methods and procedures used for the analysis of this research; it also describes all the data and information needed to develop the investigation. The results are presented in chapter 4, where the accessibility measures of the current and proposed system are described, compared and discussed,

then there are proposed changes for the trunk-feeder system to improve the accessibility measures. Chapter 5 presents the conclusions and recommendations based on the analysis made. While chapter 6 is the list of references used in the document. Also, there is an appendix with all the indicators used by analysis zone.

Literature review

Accessibility to opportunities

Conesa (2018) conducted a research based on multiscale accessibility measures to evaluate Transit Oriented Developments (TOD) strategy in Nord Pas-de-Calais (France). Conesa (2018) approach proposes pedestrian accessibility indicators at the local scale and schedule accessibility measures in a constraints-based approach at the regional scale. Two TOD scenarios are presented. The first one tackles the main metropolitan center but does not include downtown. The second one deals with a second-order peripheral pole. These scenarios present difficulties in gathering an effective local TOD and a sustainable development policy on the regional scale. However, a TOD center can enhance the intermediate scale urban centrality when using intermediate schedule accessibility measures. Furthermore, the indicators about the rail transit system highlight an uncertainty in the regional effects, which can only be solved by applying a major and expensive policy.

Niehaus et al. (2016) conducted an extensive study to explore ways to measure access inequality aimed towards better methodologies for transport project assessment in Chile. Different accessibility measures for modelled future scenarios are analyzed in the context of Santiago. The method builds from a simple accessibility formulation based on travel times forecasted by a four-step transport model. Using two subway extension projects as case study, an index is proposed to incorporate equitable accessibility impacts parallel to cost benefit analysis, which demands to further consolidate multi-criteria analysis. Conclusion remarks on operational and concept issues that need to be addressed to further build useful accessibility and equity indicators.

Busby (2004) used gravity-based accessibility measures to assess different transit projects in Chicago, emphasis was placed on the visualization of changes in transit level of service resulting from major facility investments. The accessibility model relies on the travel-time outputs of a transit network model, socio-economic data and information on current travel patterns. Findings suggest that many of the improvements in employment access from the Circle Line occur in early project phases.

Ducas (2011) also used gravity-based accessibility measures and assessed a transit line extension in Massachusetts. This research uses employment, education, health care, and recreation as opportunities for accessibility measures. It found a positive relationship between accessibility and mode share; it suggests that accessibility measures can serve as a valuable tool in the preliminary planning stages to quickly evaluate alternatives prior to the completion of a conventional four-step travel demand model.

Geurs and Van Wee (2004) evaluated the indicators available to use as accessibility measures, they analyzed them from different perspectives: theoretical basis, interpretability and communicability, data requirements and usability in social and economic evaluations. Accessibility has four types of components: land use, transportation, temporal and individual, an accessibility measure should

ideally consider all four components. They identify the advantages and disadvantages of a list of indicators classified by perspective: infrastructure-based, location-based (contour measure, potential measure, adapted potential measures and balancing factors), person-based and utility based (logsum benefit measure, space-time measure and balancing factor benefit measure).

Lee and Jin (2020) research demonstrates methodologies and data for effective accessibility-oriented transportation planning through a case study that makes use of existing accessibility analysis methodologies and the latest GIS transit data. They use these resources to estimate economic benefits resulting from improved accessibility of a bus rapid transit project in Orlando, Florida. They found economic benefits caused by the increase in accessibility such as improved travel time of a BRT service, increase of the overall transit ridership, reduction of automobile trips and mobile source emissions, it benefits people with lower income levels as this population group often dominates transit ridership.

Wang et al. (2021) made a study aiming to propose an integrated travel demand and accessibility model to examine the impact of new infrastructures on accessibility. The cumulative opportunity measure and the spatial and temporal accessibility measure are used to describe region accessibility. They used a case study from the city of Maryland. The investment in different projects (light rail, subway, toll road) is compared to a case without transportation improvement but still has the same growth. Analysis results showed that due to lack of transit facilities, car accessibility is significantly higher than transit; because of traffic congestion, car accessibility is significantly lower during peak hours than off-peak hours, while transit is the opposite due to high frequency service during peak hours; transit facility improvement can not only increase accessibility but also narrow the gap in accessibility between peak and off-peak hours.

The contributions of these scholars stand around the application of accessibility through gravity-based models; this is why this research will consider a different approach (cumulative opportunities) as suggested by Geurs and Van Wee (2004) focusing on the communicability and interpretability of the measures. Employment is the most commonly studied opportunity for accessibility analysis, to a lesser extend recreation, education and healthcare facilities (Busby, 2004; Ducas, 2011).

Most of the investigation done used GIS or four-step models to compute accessibility measures, but as by Pereira et al. (2021) developed the platform R5R because of its faster results and free access.

Transit network redesign

Mohammed et al. (2014) described the development of a prediction model of transit network evolution (P-TRANE). It is a geographic information system (GIS)-based model that develops future predictions of service changes in the bus transit spatial network and service functionality at future time steps. These changes happen because of the periodic service review process and are

influenced by changes in the future transit ridership pattern and future land use distribution changes. P-TRANE could be an aid to transit agencies by providing a decision support system prediction tool. Preliminary model results on the case study of the Toronto Transit Commission bus network show that it is successful in identifying transit routes prone to frequency changes. Results show that the P-TRANE GIS module is a promising tool capable of proposing new bus lines, including feeder lines serving rapid transit projects/stations.

Chen et al. (2020) found that within any given urban agglomeration, residents do not benefit from the transit services on an equal footing, particularly seniors, children, and low-income households. Generally, a walking distance of 400 m is used as a walkable distance threshold for bus stops in public transit design practice. Unfortunately, due to irregular transit service regions or a dispersed distribution of bus stops, age-restricted communities which have become a popular residential option for older adults are not necessarily built in locations meeting the 400 m-criterion and thus provide limited accessibility to nearby bus stops. This paper aims to apply integer linear programming (ILP) to help redesign the existing bus route (or route segment) surrounding the locations of age-restricted communities to minimize the operation cost for transit agencies under a series of constraints including satisfying accessibility requirement of bus transit to seniors.

Amiripour et al. (2014) investigated the impact on seasonal demand variation. Many cities worldwide experience seasonal variation of passenger demand that deserves changes of service frequency and in the transit network of routes. An optimal bus networks is a non-polynomial (NP)-hard complexity problem with the demand being the most important variable affecting the network. Thus, the bus network should be robust from the optimization perspective when a new demand arises. This paper introduces a model and a solution algorithm to consider the variation of passenger demand in the design of bus networks. The solution algorithm developed is a hybrid method that optimizes the design of a bus network at the route and network levels. The model was applied to the city of Mashhad in Iran. The results demonstrate how to determine the best single network of bus routes to suit variable passenger demand.

Pattnaik et al. (1998) defined urban bus route network design as determining route configuration with a set of transit routes and associated frequencies that achieves a desired objective. This can be formulated as an optimization problem of minimizing the overall cost (user's and operator's). In this paper, the use of genetic algorithms (GAs), a search and optimization method, is reported. First, a set of candidate routes competing for the optimum solution is generated. Second, the optimum set is selected using a GA. The GA is solved by adopting the usual fixed string length coding scheme along with a new variable string length coding proposed in this study. The former assumes a solution route set size, and tries to find that many best routes from the candidate route set, using a GA. The route set size is varied iteratively to find the optimum solution.

Fan and Machemehl (2006) employed a genetic algorithm to systematically examine the underlying characteristics of the optimal bus transit route network design problem. A multi objective nonlinear mixed integer model is formulated for the problem: an initial candidate route

set generation procedure that generates all feasible routes incorporating practical bus transit industry guidelines; and a network analysis procedure that decides transit demand matrix, assigns transit trips, determines service frequencies, and computes performance measures like fleet size and user cost; and a genetic algorithm procedure guides the candidate solution generation process, and selects an optimal set of routes from the huge solution space. Comprehensive characteristics underlying the problem, including the effect of route set size, the effect of demand aggregation, and the redesign of the existing transit network issue, are also presented.

Situ and Karner (2025) found that since the mid-2010s, an increasing number of transit agencies have undertaken bus network redesigns to better align service with rider needs. These redesigns entail major equity impacts but existing approaches to assessing those impacts often fall short. This study reviews 45 redesigns across 40 agencies and produces a normative four-level analytical framework for analyzing their equity impacts. They argue that redesigns equity analyses should clearly define target populations, impacts assessed, and the rules used to make equity determinations. Current equity analyses often rely on census data and proximity-based metrics, which overlook the lived experiences and barriers faced by older adults, people with disabilities, and caregivers. They recommend incorporating rider-based sources, such as on-board surveys, and integrating community feedback to capture who benefits from or is burdened by service changes.

The contributions of these scholars reveals that commonly when a transit network redesign project is developed it is assessed from different perspectives, some of them aim to solve equity issues in the service; other focus on the cost reduction of the user cost and agency cost, which is strongly related with performance measures of efficiency like fleet reduction; many redesigns projects prioritize the demand as the main input; even a few of the studies incorporate the accessibility concept, but defined as access to the closest bus stop, which do not reflect the wide range of destinations a user can reach once they are on the bus. It is clear all of the aspects mentioned before have to be considered when redesigning a transit network, nonetheless, it is important to assess if the users will benefit from it from a land use perspective, meaning that accessibility will change and that change has to be measured, this is why this research used the accessibility approach to evaluate the performance of a transit network redesign in the city of San José, Costa Rica as a case study.

Methodology

The development of the present research was divided into two major phases: data preparation and accessibility analysis. The first one was the preparation of the GTFS files, which contain the detailed stops, itineraries and routing and other information about the transit system; the job data and the other opportunities as the destinations; the streets network to access the bus stops; and the analysis zones according to the available data. The second phase consisted of scripting on RStudio the necessary code to make the calculations, for the current transit network and for the redesigned one; then both cases are compared to determine which one is greater in terms of accessibility, if the current scenario is better some changes are proposed to improve the redesigning until it outperforms the other case. Figure 1 illustrates the flowchart prepared for the methodology.

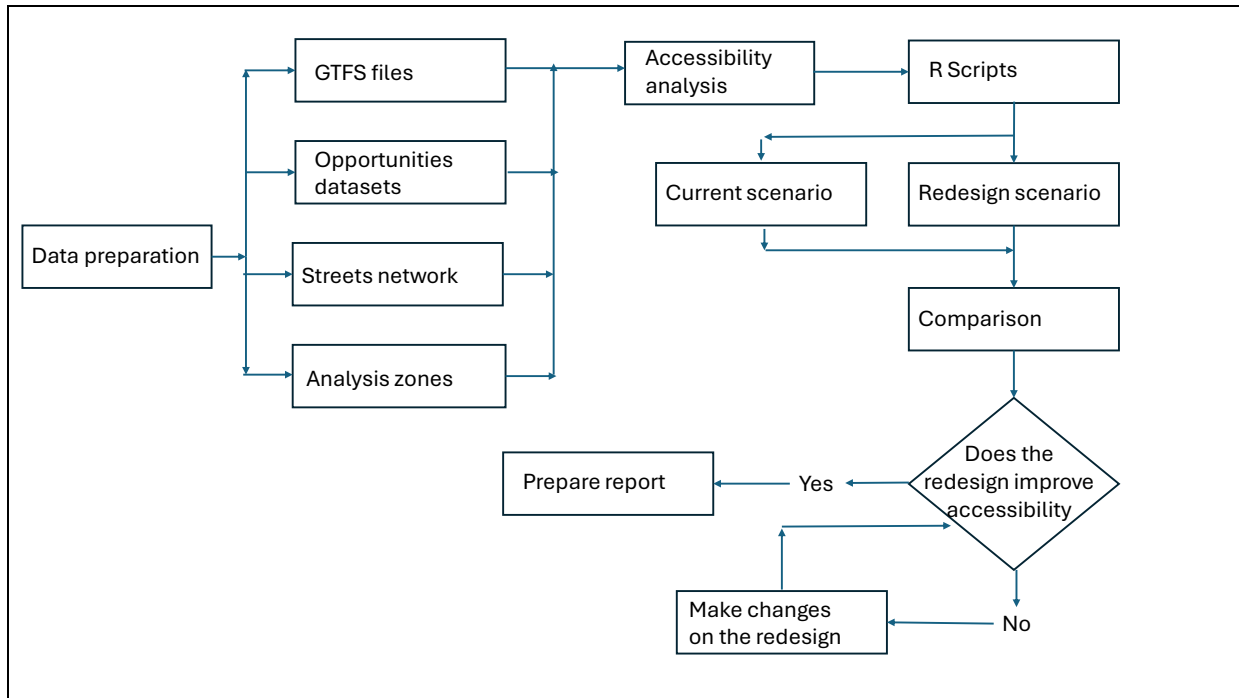


Figure 1. Methodology flowchart

Data preparation

General Transit Feed Specification (GTFS files)

According to gtfs.org (n.d.) the General Transit Feed Specification is a standardized data format that provides a structure for public transit agencies to describe the details of their services such as schedules, stops, fares, etc. It allows public transit agencies to publish their transit data in a format that can be consumed by a wide variety of software applications, most commonly trip planners. This means that users can easily get travel information to access public transit services by using their smartphones or similar devices.

A GTFS file consists of a zip file which contains at least 7 text files with different kinds of information about the transit system, which communicate between them with different parameters within each one of them (gtfs.org, n.d.). Figure 2 shows the general layout of the GTFS dataset.

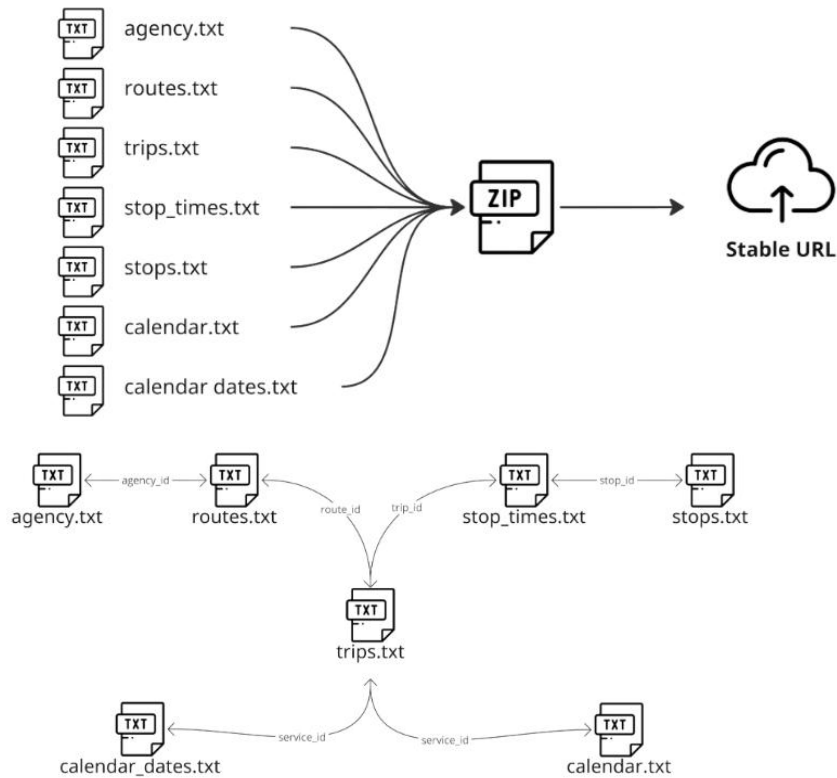


Figure 2. Layout of the GTFS files

Source: (gtfs.org, n.d.).

A GTFS dataset can be composed of up to 32 text files, but only 7 of them are mandatory, thus for the development of this research only the 7 required files were generated. Table 1 shows the description of the required parameters of a GTFS dataset.

Table 1. Required parameters of the GTFS files

Text file	Field name	Type	Description
agency.txt	agency_id	Unique ID	Identifies a transit brand which is often synonymous with a transit agency. Note that in some cases, such as when a single agency operates multiple separate services, agencies and brands are distinct. This document uses the term "agency" in place of "brand". A dataset may contain data from multiple agencies.

Text file	Field name	Type	Description
	agency_name	Text	Full name of the transit agency.
	agency_url	URL	URL of the transit agency.
	agency_timezone	Timezone	Timezone where the transit agency is located. If multiple agencies are specified in the dataset, each must have the same agency_timezone.
routes.txt	route_id	Unique ID	Identifies a route.
	agency_id	Foreign ID referencing agency.agency_id	Agency for the specified route.
	route_short_name	Text	Short name of a route. Often a short, abstract identifier (e.g., "32", "100X", "Green") that riders use to identify a route. Both route_short_name and route_long_name may be defined.
	route_long_name	Text	Full name of a route. This name is generally more descriptive than the route_short_name and often includes the route's destination or stop. Both route_short_name and route_long_name may be defined.
	route_type	Enum	Indicates the type of transportation used on a route. Valid options are: 0 - Tram, Streetcar, Light rail. Any light rail or street level system within a metropolitan area. 1 - Subway, Metro. Any underground rail system within a metropolitan area. 2 - Rail. Used for intercity or long-distance travel. 3 - Bus. Used for short- and long-distance bus routes. 4 - Ferry. Used for short- and long-distance boat service. 5 - Cable tram. Used for street-level rail cars where the cable runs beneath the vehicle (e.g., cable car in San Francisco). 6 - Aerial lift, suspended cable car (e.g., gondola lift, aerial tramway). Cable transport where cabins, cars, gondolas or open chairs are suspended by means of one or more cables.

Text file	Field name	Type	Description
			7 - Funicular. Any rail system designed for steep inclines. 11 - Trolleybus. Electric buses that draw power from overhead wires using poles. 12 - Monorail. Railway in which the track consists of a single rail or a beam.
Calendar.txt	service_id	Unique ID	Identifies a set of dates when service is available for one or more routes.
	monday	Enum	Indicates whether the service operates on all Mondays in the date range specified by the start_date and end_date fields. Note that exceptions for particular dates may be listed in calendar_dates.txt. Valid options are: 1 - Service is available for all Mondays in the date range. 0 - Service is not available for Mondays in the date range.
	tuesday	Enum	Functions in the same way as monday except applies to Tuesdays
	wednesday	Enum	Functions in the same way as monday except applies to Wednesdays
	thursday	Enum	Functions in the same way as monday except applies to Thursdays
	friday	Enum	Functions in the same way as monday except applies to Fridays
	saturday	Enum	Functions in the same way as monday except applies to Saturdays
	sunday	Enum	Functions in the same way as monday except applies to Sundays
	start_date	Date	Start service day for the service interval.
	end_date	Date	End service day for the service interval. This service day is included in the interval.
Calendar_dates.txt	service_id	Foreign ID referencing	Identifies a set of dates when a service exception occurs for one or more routes. Each (service_id, date) pair may only appear once in calendar_dates.txt if using

Text file	Field name	Type	Description
		calendar.service_id or ID	calendar.txt and calendar_dates.txt in conjunction. If a service_id value appears in both calendar.txt and calendar_dates.txt, the information in calendar_dates.txt modifies the service information specified in calendar.txt.
	date	Date	Date when service exception occurs.
	exception_type	Enum	Indicates whether service is available on the date specified in the date field. Valid options are: 1 - Service has been added for the specified date. 2 - Service has been removed for the specified date.
stops.txt	stop_id	Unique ID	Identifies a location: stop/platform, station, entrance/exit, generic node or boarding area. ID must be unique across all stops.stop_id. Multiple routes may use the same stop_id.
	stop_name	Text	Name of the location. The stop_name should match the agency's rider-facing name for the location as printed on a timetable, published online, or represented on signage.
	stop_lat	Latitude	Latitude of the location.
	stop_lon	Longitude	Longitude of the location.
trips.txt	route_id	Foreign ID referencing routes.route_id	Identifies a route.
	service_id	Foreign ID referencing calendar.service_id or calendar_dates.service_id	Identifies a set of dates when service is available for one or more routes.
	trip_id	Unique ID	Identifies a trip.
stop_times.txt	trip_id	Foreign ID referencing trips.trip_id	Identifies a trip.

Text file	Field name	Type	Description
	arrival_time	Time	Arrival time at the stop (defined by stop_times.stop_id) for a specific trip (defined by stop_times.trip_id) in the time zone specified by agency.agency_timezone. If there are not separate times for arrival and departure at a stop, arrival_time and departure_time should be the same. For times occurring after midnight on the service day, enter the time as a value greater than 24:00:00 in HH:MM:SS.
	departure_time	Time	Departure time from the stop (defined by stop_times.stop_id) for a specific trip (defined by stop_times.trip_id) in the time zone specified by agency.agency_timezone, not stops.stop_timezone. If there are not separate times for arrival and departure at a stop, arrival_time and departure_time should be the same. For times occurring after midnight on the service day, enter the time as a value greater than 24:00:00 in HH:MM:SS.
	stop_id	Foreign ID referencing stops.stop_id	Identifies the serviced stop. All stops serviced during a trip must have a record in stop_times.txt. Referenced locations must be stops/platforms. A stop may be serviced multiple times in the same trip, and multiple trips and routes may service the same stop.
	stop_sequence	Non-negative integer	Order of stops, location groups for a particular trip. The values must increase along the trip but do not need to be consecutive. Example: The first location on the trip could have a stop_sequence=1, the second location on the trip could have a stop_sequence=23, the third location could have a stop_sequence=40, and so on.

Source: gtfs.org (n.d.).

Costa Rica do not have these datasets available, for this research they had to be generated. For better organization of the process of making the GTFS files a different dataset was generated for

each one of the 12 transit zones of the San José city, also two additional datasets, one for the interzone routes and other for the train services. For the agency file there was no need to specify the company (in Costa Rica the agencies providing the bus services are private companies), so in all files the transit authority (Public Transit Council for buses and Costa Rican Railway National Institution for trains) was set as the agency.

The calendar used for the files was from January 1st, 2025, to December 31st, 2030, but the dates set do not affect the results of the analysis, so any other could have been chosen, for the same reasoning there were no exceptions in the calendar dates files. The only kind of service set was from Monday to Friday, as the scope of the research was set to the morning peak hour for business days.

The operational layout of the transit routes was provided for CTP (2024) and INCOFER (2025) for the current network and by MOPT (2023a-i, 2024a-c) for the redesigned network. These operational layouts define the list of routes to include in the files, the locations of the stops, and the schedules of each route. For the train services the schedules are very updated and detailed, they specify the exact arrival time at each stop, but for the buses it was not always the case. The buses schedules specify the headway by hour and direction for each route, so the exact time at the first stop was estimated from these headways, there is no information of the arrival time at the rest of the stops, so it was estimated using an average speed in the peak hour.

The schedules of the bus routes from CTP (2024) not always agree with the schedule provided for the company, this is an issue that Costa Rica has been facing since the pandemic in 2020. At that time the ridership dropped so low that CTP allowed the companies to reduce the schedules up to 30% and the companies can decide if they use the reduction or not or how much they reduce, until CTP officially sets a new schedule according to the new ridership of each route. In the cases that CTP has not updated the schedules secondary data from ARESEP (2025) was used to have a schedule more accurate.

Buses in Costa Rica use electronic bars to count the number of passengers boarding and alighting from the bus, they also register the time and location of each movement, so the national authorities request this information to the companies as an input to make the redesigns. As it was mentioned before the network redesign project in San José was originally proposed in 1999, and since then the MOPT has been trying to implement it since then, but periodically the studies must be updated because the demand pattern changes, as well as the ridership and other conditions, the last update process started in 2024 and is still going, before that a basic update was run in 2023 using the data from the 2021 update, hence for each zone the average speed used was from the most recent available update, it is detailed in Table 2.

Table 2. Average speed by zone.

Zone	Speed (km/h)	Source
San Francisco	14.13	MOPT (2024c)
Desamparados	11.32	LCR Logística (2021)
Escazú - Santa Ana	16.32	MOPT (2023c)
Pavas	11.32	LCR Logística (2021)
Tibás - Santo Domingo	16.02	MOPT (2024a)
Moravia - Paracito	14.59	MOPT (2023e)
Guadalupe - Coronado	12.24	MOPT (2024b)
San Pedro - Curridabat - Tres Ríos	11.95	LCR Logística (2021)
Uruca - Heredia Sur	11.82	LCR Logística (2021)
Hatillo - Alajuelita	8.33	LCR Logística (2021)
Paso Ancho - San Sebastián	9.91	LCR Logística (2021)
Central	8.52	LCR Logística (2021)
Interzone routes	12.21	Average

Analysis zones

From other studies conducted in accessibility the usual geographical unit used for accessibility analysis is the census tracts, but in Costa Rica this unit is not used, there are 3 territorial divisions: provinces, municipalities and districts, but all three are too extensive for accessibility purposes. For census reasons there is a 4th subdivision called minimum geographical unit (UGM), which is very similar to a dissemination area, which is very small for the analysis, the study zone has around 9000 UGMs, which would generate a travel time matrix of more than 80 million entries, it is not feasible for RStudio.

The biggest transportation study made in Costa Rica was LCR Logística (2007) for the Greater Metropolitan Area of San José, it created 424 transportation analysis zones (TAZ), of which around 250 are in the study area of the present research. For the accessibility analysis RStudio can manage an extensive number of zones, but to avoid the software reaching its capacity a limit of 1000 was set, so the zones were created making subdivisions of the 250 TAZ mentioned previously based on transit parameters. Finally, 868 zones were obtained, and are shown in Figure 3.

For each zone the population was calculated. The census of INEC (2022) only has the population on the district level, while the INEC (2011) census has it on an UGM level, so the population was computed based on the 2022 census given that it is the most recent one but distributed within the UGM proportionally by district of the 2011 census. The population data for each zone is needed

to get overall indicators of the comparison of the accessibility scenarios, the increase or decrease in accessibility will be measured with a weighted average, using as weighting factor the population.

The centroids of the zones had to be reviewed to locate them in the densest portion of the zone, given that in some of them it was not the default case, mainly in the largest zones, and this must be done to have better results and not to add additional walking time.

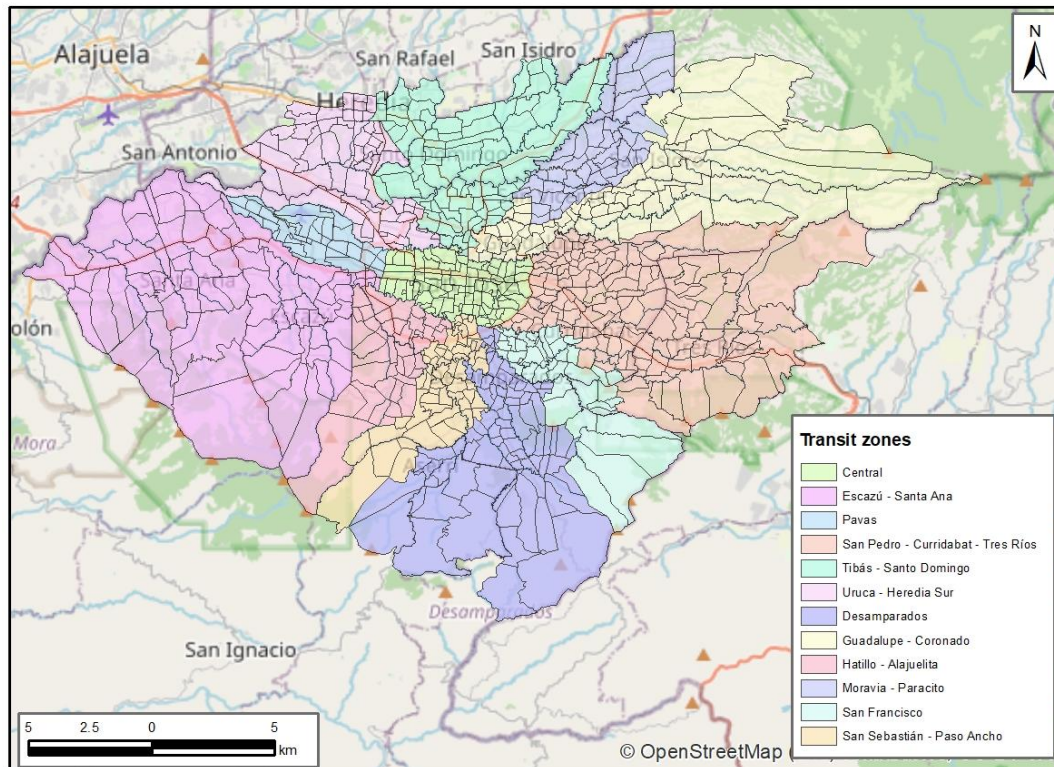


Figure 3. 868 analysis zones

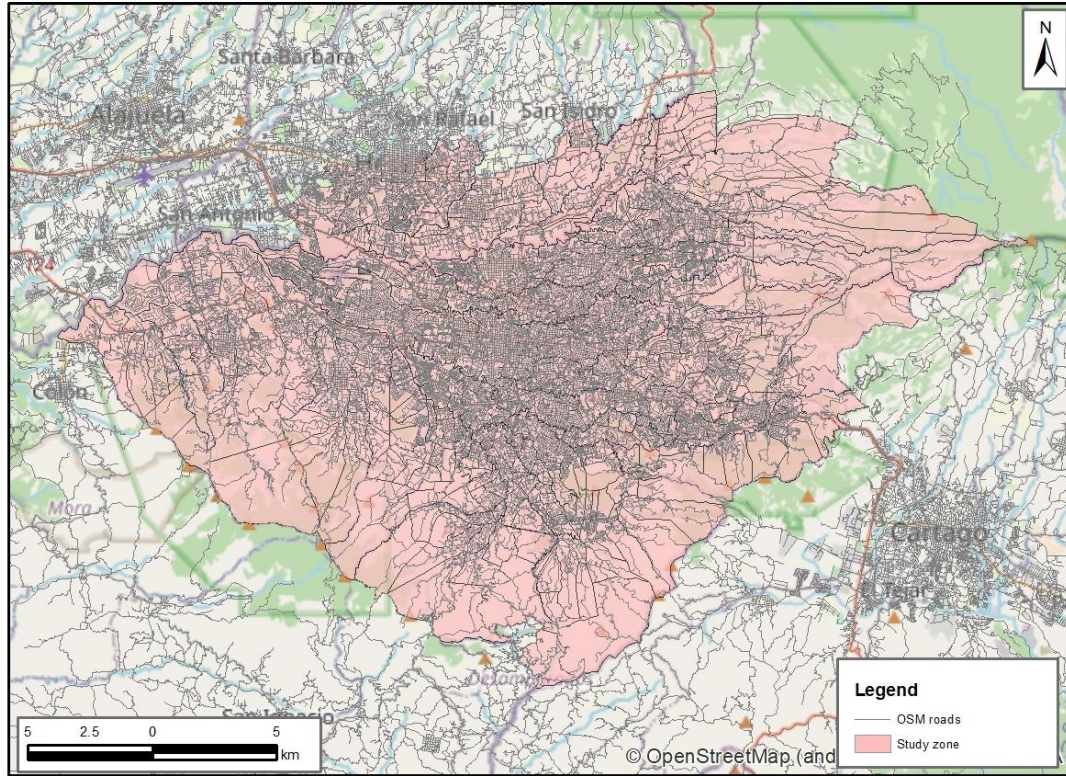


Figure 4. Open Street map roads

Source: Open Street Map (2025)

Walking network

The accessibility analysis needs the walking network to estimate the access time from the centroids of each zone to the required bus stop for each origin destination pair, it is also needed for walking times in cases where a transfer is needed between two bus stops. This network was obtained from Open Street Map (2025), and no modification was required. Figure 4 shows the walking network.

Opportunities datasets

This study used four kinds of opportunities for accessibility analysis: employment, recreation, universities and healthcare facilities. These four types of destinations are within the largest purposes of trips in any city.

Costa Rica does not have detailed job datasets, the only useful source was MTSS (2024), which indicates that the Central Region of Costa Rica has a 53.6% employment rate, and combining this datum with the population reported in INEC (2022) for this region (3 067 293 inhabitants) gives a total of 1 644 069 employees for the region.

Even with this datum, it is not enough for the analysis required, because the number of jobs is needed by analysis zone, thus a distribution was estimated using the land use layers available in

Open Street Map (2025) and using employment ratios per square meter from other countries which have such information (Ministry of Transportation of Qatar, 2022; TRICS, 2025; Transportation Group New Zealand, 2017), these ratios can be found in Table 3.

Table 3. Employment ratios.

CR land use	UK, NZ or Qatar land use	Employment /100m ²
Bus station	Petrol Station with food/beverage stores	1.78
Banks	Bank Branch	1.43
Airport	Government Office	3.45
Cafes (coffee shops)	Café	3.30
Car Rentals	Service Station	1.76
Chalets	Hostel & Halls of Residence	0.17
Cinemas	Cinema	0.97
Courthouse	Office	9.23
Drugstores Pharmacies	Shop	1.39
Fast Food	Take Away/Fast Food	12.46
Ferry Stop	Shop	1.39
Fuel Petrol Station	Petrol Stations	2.02
Guest Houses	Hostel Secondary	0.95
High schools	Secondary	3.16
Hospitals	Hospital	3.81
Hostels	Hostel & Halls of Residence	0.17
Hotels	Hotel	1.00
Industrial (free trade zone)	Medium Industry	1.85
Library	Leisure Complex	1.58
Lodging	Hotel	1.00
Museum	Museum	1.51
Power Station and Towers	Computer and Telecommunication service provider	2.07

CR land use	UK, NZ or Qatar land use	Employment /100m ²
Post Offices	Post Office Branch/ courier services	4.11
Police Station	Office	9.23
Playgrounds	Leisure Complex	1.58
Place of Workship	Jumma Mosques	0.28
Parks and Reserves	Other Use	0.10
Parking Areas for Vehicles	Other Use	0.10
Schools	Primary	2.43
Retail Shops	Retail Park	0.58
Restaurants	Restaurant	6.36
Railway Station	Government Office	3.45
Pubs Bars	Public House	2.00
Prison Jails	Government Office	3.45
Veterinary Clinics	Veterinary	2.86
Universities	Government University	0.87
Town Halls	Office	9.23
Theme Parks	Theme Parks/Amusement Parks	8.36
Theaters	Theatre	4.77
Swimming Pools	Leisure Complex	1.58
Sports Stadiums	Health Clubs & Sports Centres	0.77
Sports Centers racetracks	Health Clubs & Sports Centres	0.77
Soccer Fields	Leisure Complex	1.58

Source: Qatar, New Zealand and United Kingdom

These ratios were applied to the land use layers mentioned before, but the total of employment does not match the total found previously, so a factor was applied to all job locations to increase them proportionally to match the desired total. This then raises the issue that the Central Region is not the same as the study zone in this research, but as the jobs layer has the geographical distribution of the jobs it was necessary to clip the layer to the study zone and summarize the totals

by zone. The study zone has a total of 691 050 jobs, around 42% of the employment of the Central Region. To have an idea of the data obtained, Figure 5 shows the job density in the city.

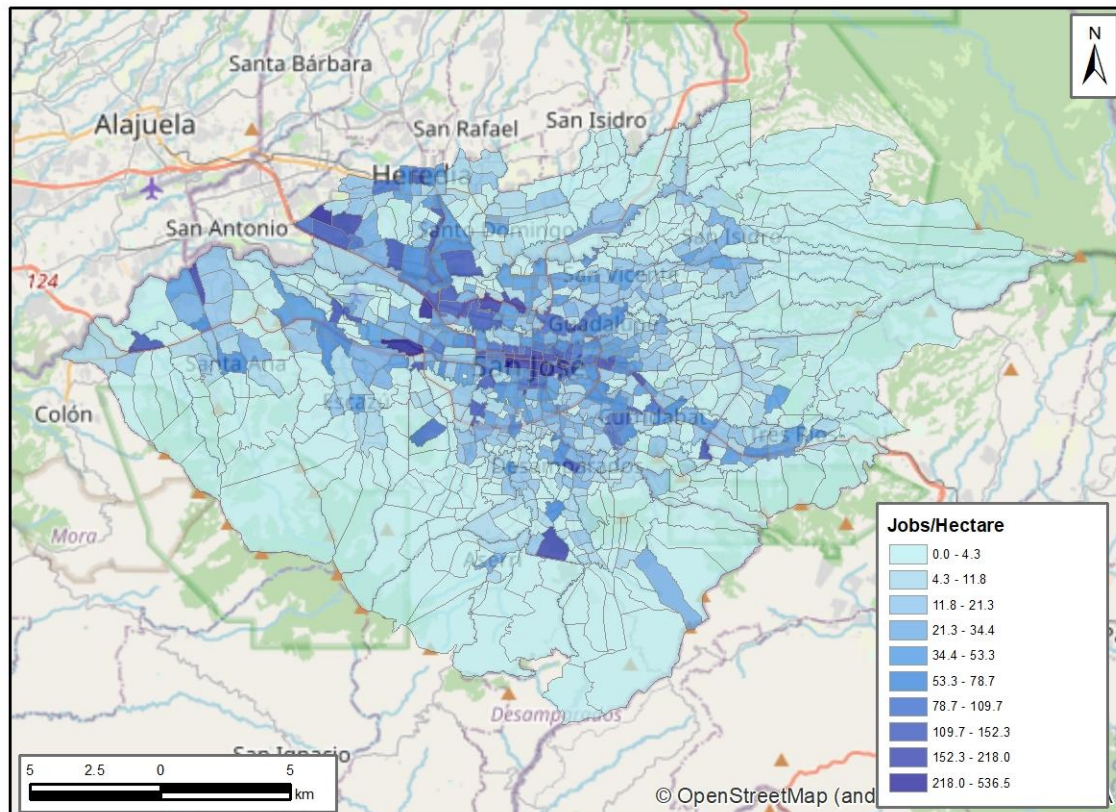


Figure 5. Job density in the study zone

The recreation facilities layer was obtained from Open Street Map (2025), it is composed of public parks, public sports facilities and shopping malls; Figure 6 shows the density of this opportunity in the city. The Universities facilities layer was also obtained from Open Street Map (2025) and complemented with data from Google Maps (2025); its density is showed in Figure 7. Finally, the public healthcare facilities layer was also obtained from Open Street Map (2025) and complemented from CCSS (2023), it is composed of Hospitals, Clinics and little healthcare establishments called EBAIS in the country, Figure 8 shows this layer's density.

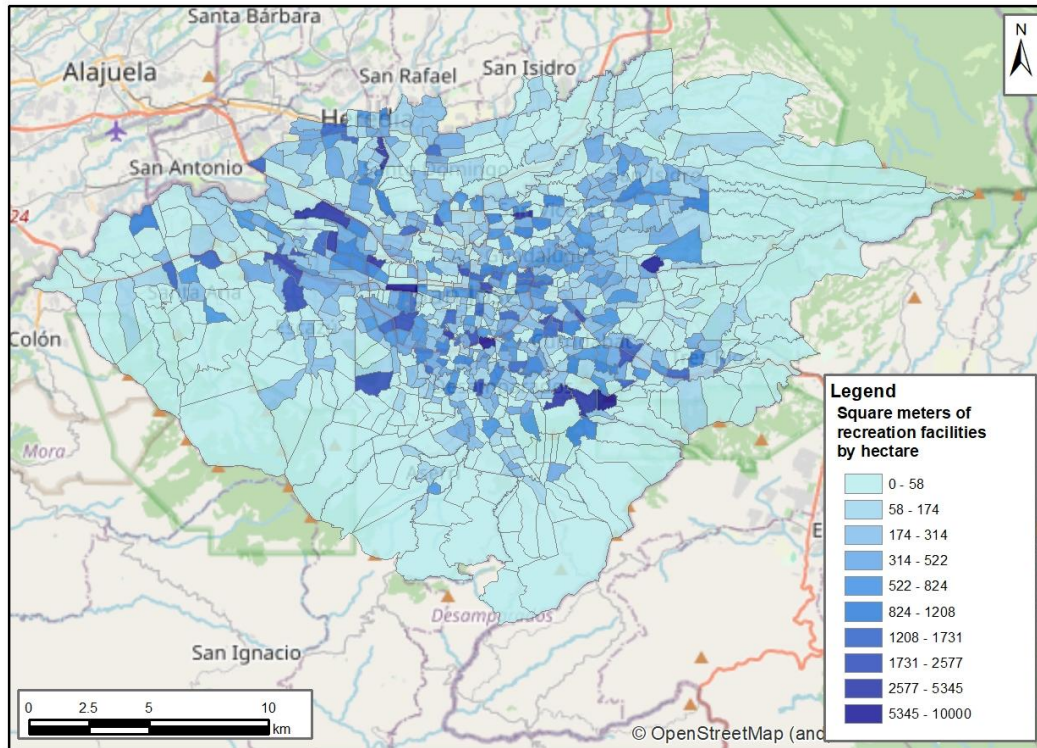


Figure 6. Recreation facilities density

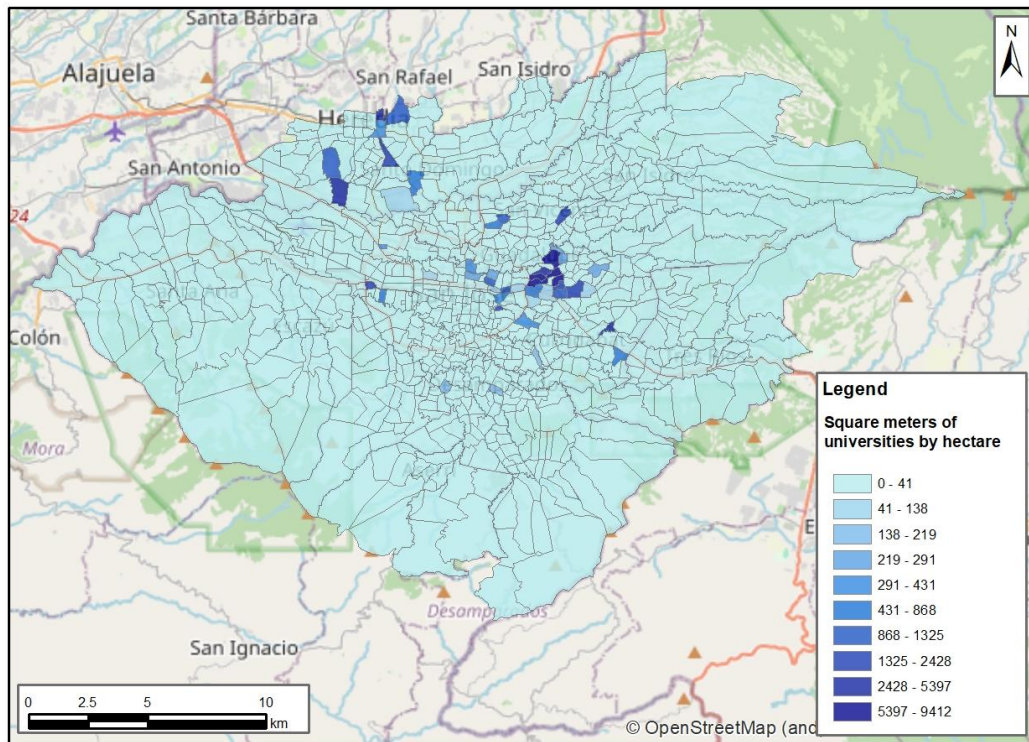


Figure 7. Universities facilities density

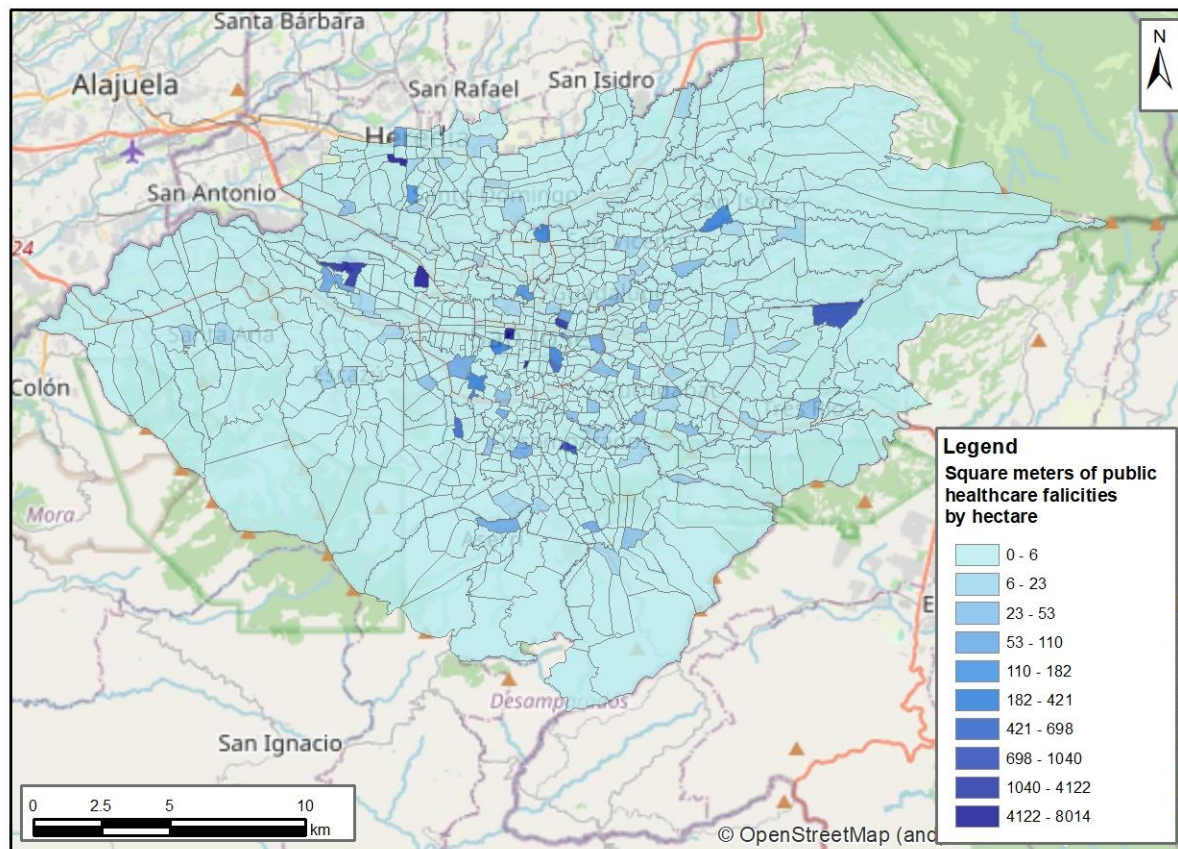


Figure 8. Public Healthcare facilities density

Accessibility analysis

R5R

The R5R package allows users to generate detailed routing analysis or calculate travel time and monetary cost matrices using seamless parallel computing on top of the R5 Java machine. While R5 is developed by Conveyal, the package R5R is independently developed by a team at the Institute for Applied Economic Research (IPEA) with contributions from collaborators (CRAN, 2025).

To make the script to run the analysis on RStudio the first thing to do is upload the shapefile of the analysis zones, it is preferable to upload it using the corrected centroids shapefile in WGS84 and with a column with the opportunities, latitude and longitude and the geometry must be removed. Then, the network is built with the `setup_r5()` function, this creates a routing network based on the streets network from Open Street Map (2025) and the generated GTFS files. After that, the `travel_time_matrix()` function is used to compute the time of travel between every origin destination pair, some parameters can be set, such as departure time, mode, maximum trip duration, time window, percentiles, maximum rides and others. Finally, the accessibility measure can be

done by using the `access()` function or by summarizing them manually, for this research the latter was the case. First it is needed to join the opportunities to the time travel matrix by destination, then, it is necessary to drop all travel times larger than the threshold value (60 minutes in this case) and then summarize the total of opportunities by origin.

The process of making the scripts is very simple and straight forward if the person has some basic knowledge in scripting in R. During the process some common issues can be errors for not allocating enough RAM memory, if the analysis has too many analysis zones and the time travel matrix is big, this is why in this research the limit of 1000 zones was set. Another common problem is errors in the network built for the routing, if there are problems with the GTFS files, if they are not generated correctly, if the files are being generated instead of downloaded from an agency website, to avoid this, online there are several validators of GTFS datasets to make sure they are being properly generated. The results can be exported in a shapefile format.

Current radial transit network

The process detailed in the previous section was applied with the GTFS datasets of the current radial transit network, this resulted in the number of jobs and square meters of the other opportunities that can be reached in 60 minutes of travel by transit for each one of the analysis zones.

Proposed trunk-feeder transit network

After the current transit system accessibility analysis was completed, it was necessary to make the same analysis for the proposed redesign, in the same R script only two changes had to be made, first the GTFS files used had to be changed to the redesigned ones, and second the number of transfers had to be increased, because of how a trunk feeder network works some trips now will have to make more transfers. Finally, the result was the same as the previous section, the number of opportunities by analysis zone.

Comparison

With the outputs of the two previous sections obtained, the next step was to compare them. For this a simple error percentage equation was applied as showed in [Equation 1].

$$A_c = \frac{A_{T-F} - A_r}{A_r} * 100 \quad [\text{Equation 1}]$$

where,

A_c : accessibility change,

A_{T-F} : accessibility of the trunk-feeder network,

A_r : accessibility of the radial network.

With this calculations done the results are available by analysis zone, some of them can be positive, while others can be negative, thus for an overall result a simple weighted average was computed, using the population as the weighting factor, as [Equation 2 shows.

$$A_A = \frac{\sum_{i=1}^n A_i * P_i}{\sum_{i=1}^n P_i} \quad [\text{Equation 2}]$$

where,

A_A : average accessibility,

n : number of analysis zones,

A_i : accessibility of each i zone,

P_i : population of each i zone.

The results using average accessibility will be shown in the next chapter for every one of the 12 transit zones and overall.

Redesign improvement

When the network was redesigned by the Ministry one of the indicators used to assess the efficiency purpose of the project was the fleet reduction keeping the same headways. Thus, there is room for improvement of the headways using the available fleet to match it with the current one. In every transit zone the analysis zones with the largest decrease in accessibility will be identified, as well as the routes serving these zones, and a headway improvement will be applied in these routes until the redesign fleet matches the current one.

Once the schedules have been redone, the GTFS files must be generated again, and the accessibility analysis and comparison with the radial network too. If the current transit system outperforms the redesigned one in this phase, there is no other improvement to model, given that using the same fleet they are being compared under the same conditions, which is the fairest comparison. Some other actions can be taken to improve the performance of transit, like reducing the travel times by building BRT lanes, nevertheless, if the current network outperforms the redesigned one without these lanes, it will outperform it with the lanes too, so this condition will not be analyzed.

Report preparation

Once all the previous phases were completed, the present document was prepared to report the results of the analysis and make conclusions and recommendations about the research developed.

Accessibility analysis: case study of San José

This chapter describes the case study, the bus network redesign of the city of San José, Costa Rica. Then the accessibility measures for both the current network and the proposed one are presented, discussed and compared.

Case Study

The bus network redesign in the city of San José is a project originally proposed by LCR Logística (1999) and promoted for the Ministry of Public Works and Transportation (MOPT) since then. The project faced several issues to be implemented, in the first years the unfamiliarity from the companies with the project generated substantial delays, also to make the change in the system it was necessary to reduce the number of companies (using consortiums) which has generated delays too, and to date this has not been achieved 100%. While these issues were trying to be solved, time passed, and the studies had to be updated several times, which required time, effort and resources from the Ministry. This section will describe the latest version of the project.

The street network of San José is irregular; it combines different types of networks. In downtown it follows a network almost orthogonal, with streets from north to south and avenues from west to east. Then, downtown is connected with the main urban poles of the periphery by main collector routes in a radial way. This periphery urban poles also have small orthogonal networks. Then, the rest of the neighborhoods connect to the city in irregular ways. For this reason, is that the transit network was created in a radial way; from every neighborhood of the city a transit route connects directly to downtown. The city center is overflowed with more than 250 terminal stops.

The redesign project was proposed to make the network more efficient. The city was divided in 12 transit zones (see Figure 3), one for downtown, and 11 other in the periphery, where each one of them was defined joining the territory of all the routes who go through a same main collector radial street (as a basin). In each zone the main transit routes are kept as trunk routes, so they connect the transit zone to downtown, and the rest of the bus routes become feeders that connect the different neighborhoods with the closest trunk route. Figure 9 illustrates this concept. Figure 10 to Figure 21 show the last version of the redesigned network by transit zone, where each line represents a different route.

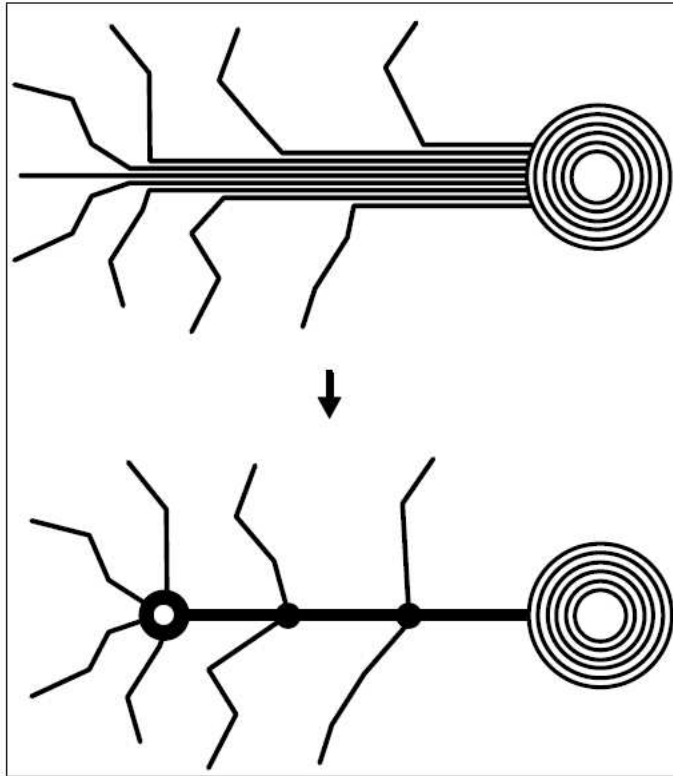


Figure 9. Comparison of the radial and trunk-feeder transit systems

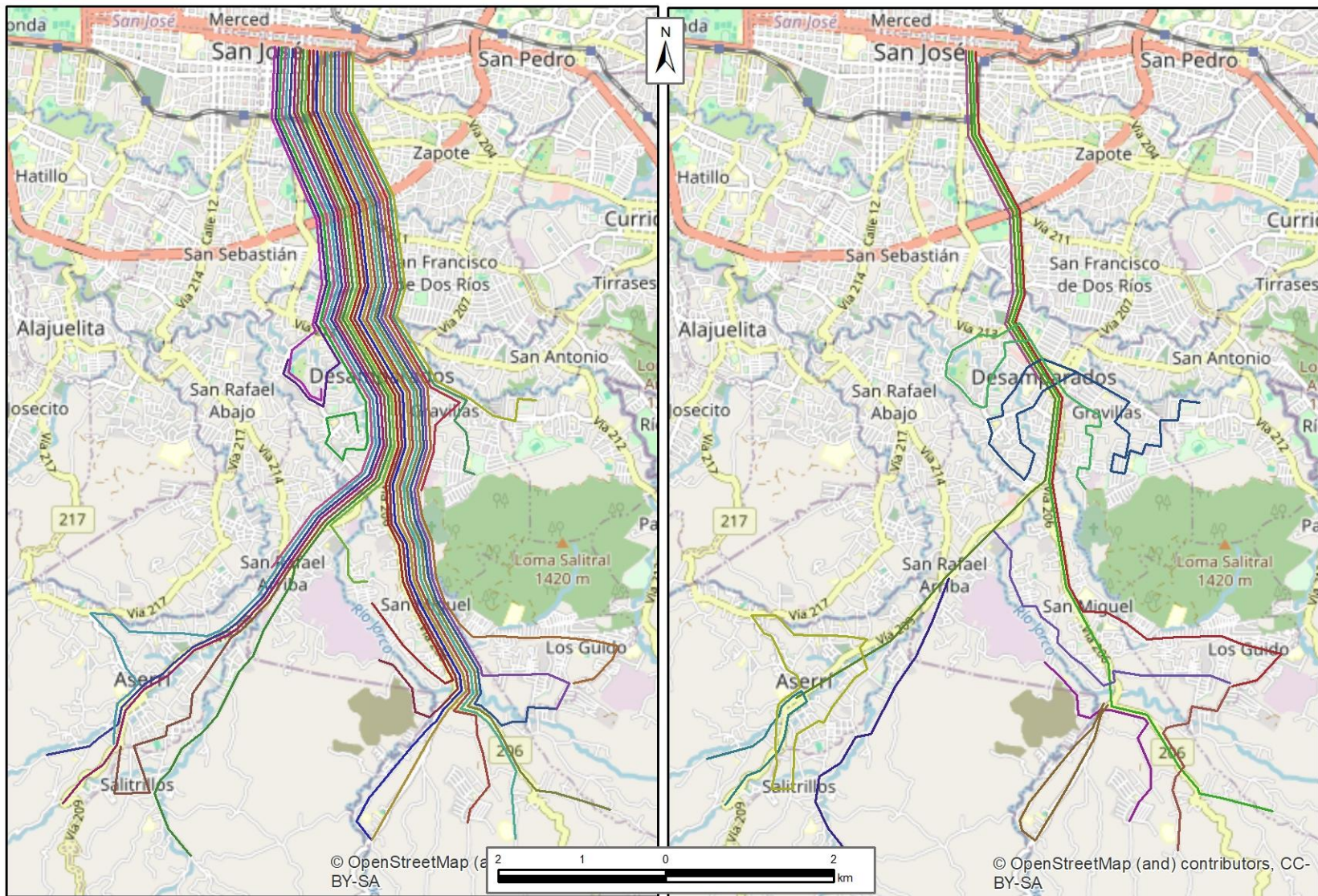


Figure 10. Desamparados transit zone redesign



Figure 11. San Francisco transit zone redesign

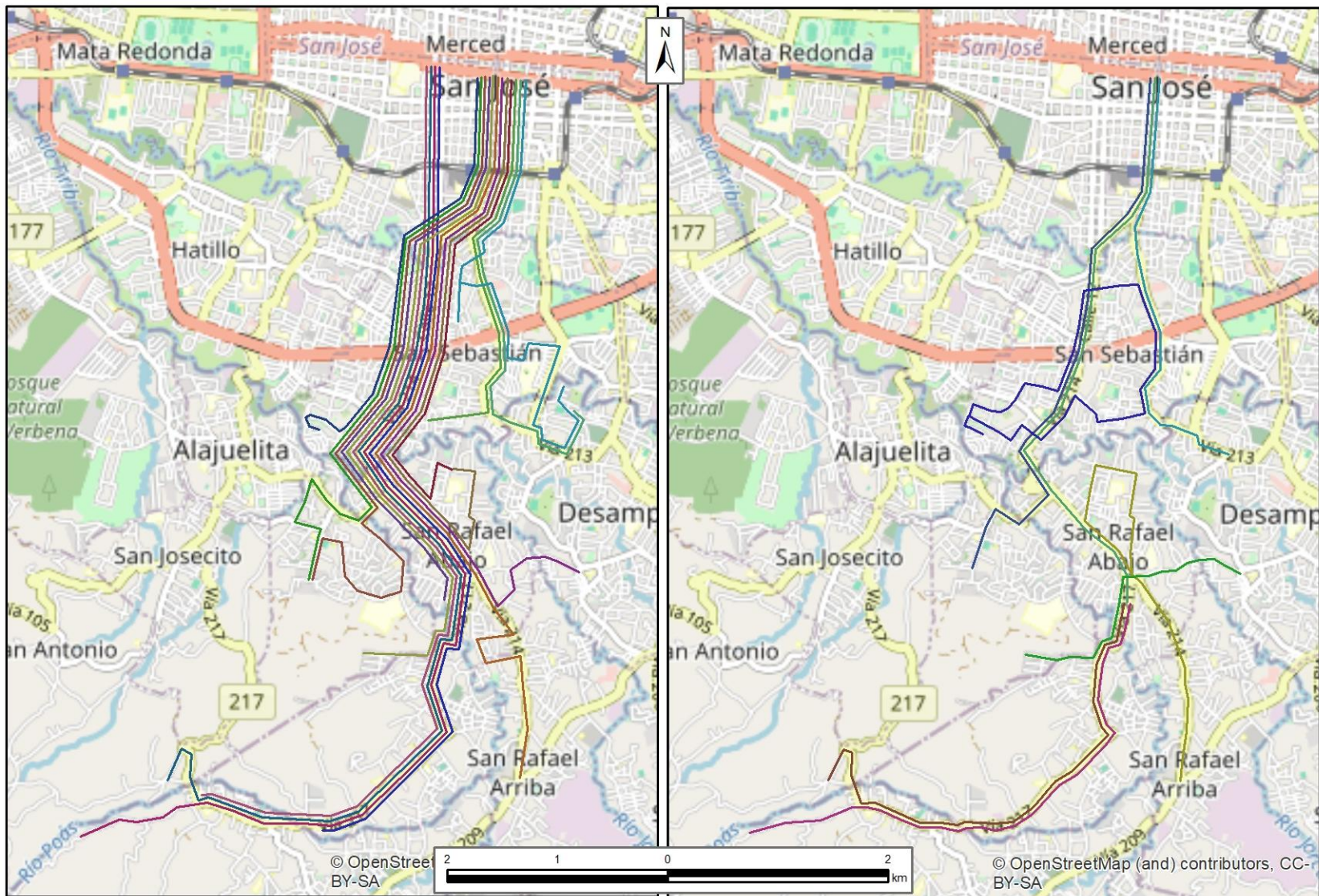


Figure 12. Paso Ancho – San Sebastián transit zone redesign

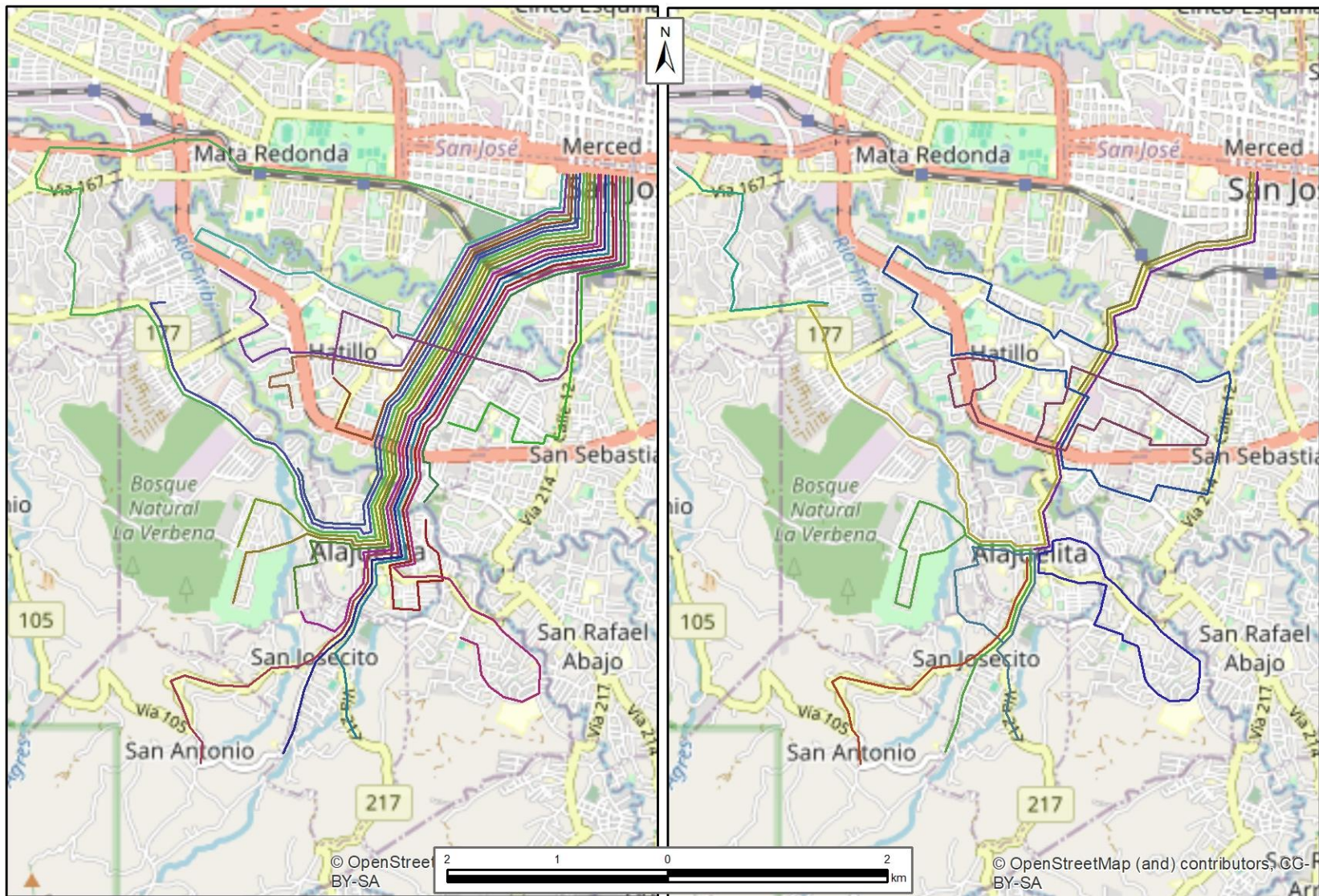


Figure 13. Hatillo – Alajuelita transit zone redesign

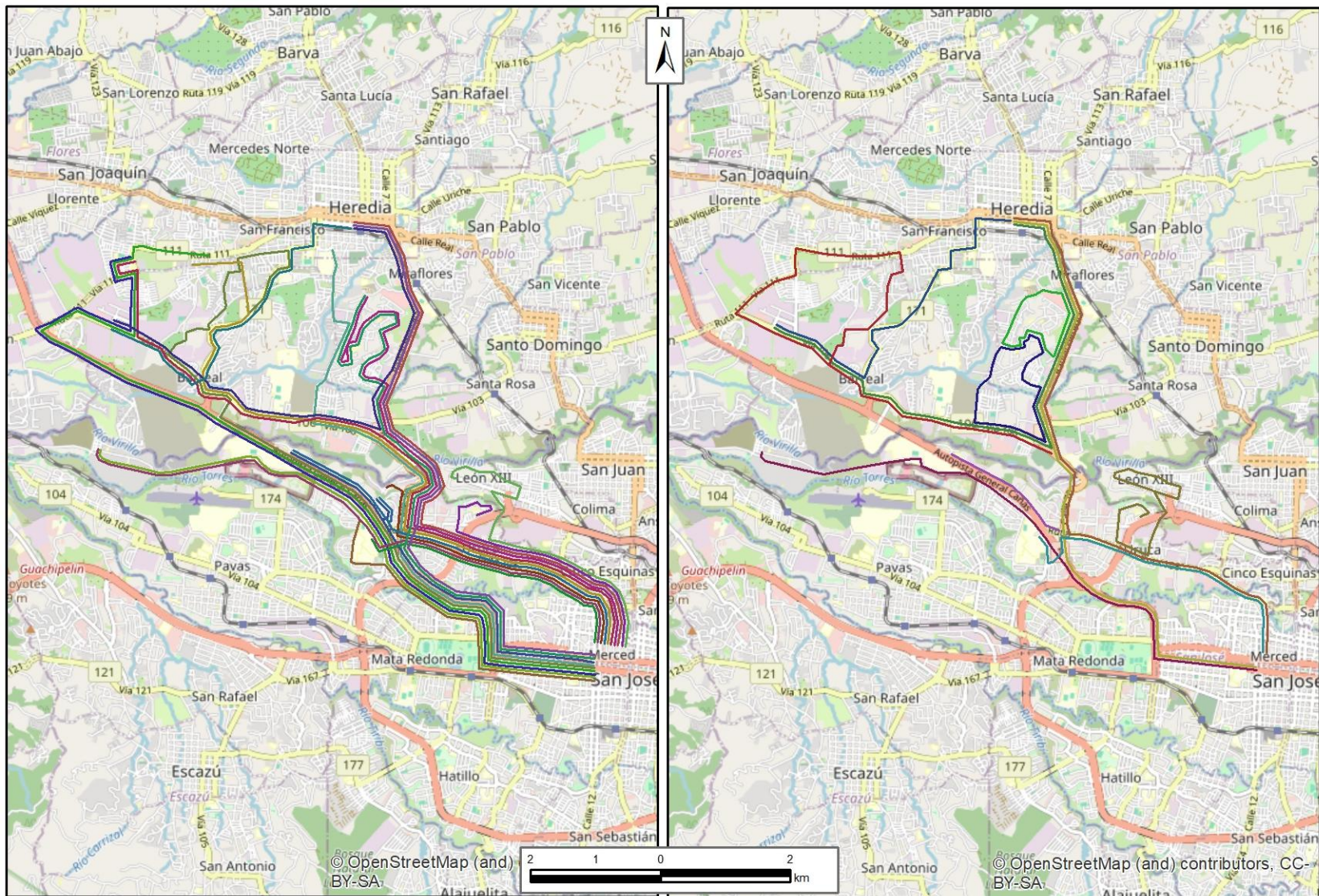


Figure 14. Uruca – Heredia Sur transit zone redesign

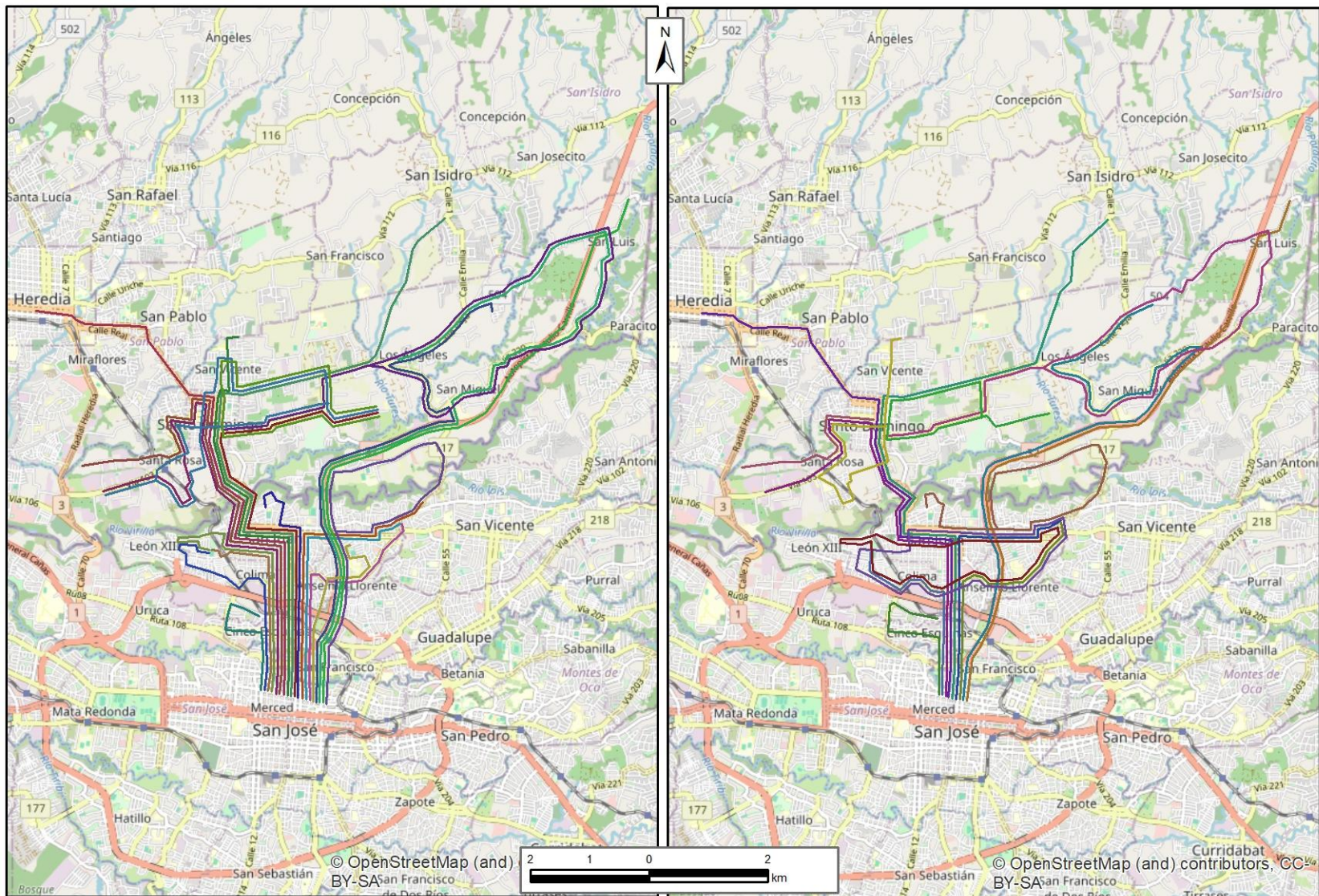


Figure 15. Tibás – Santo Domingo transit zone redesign

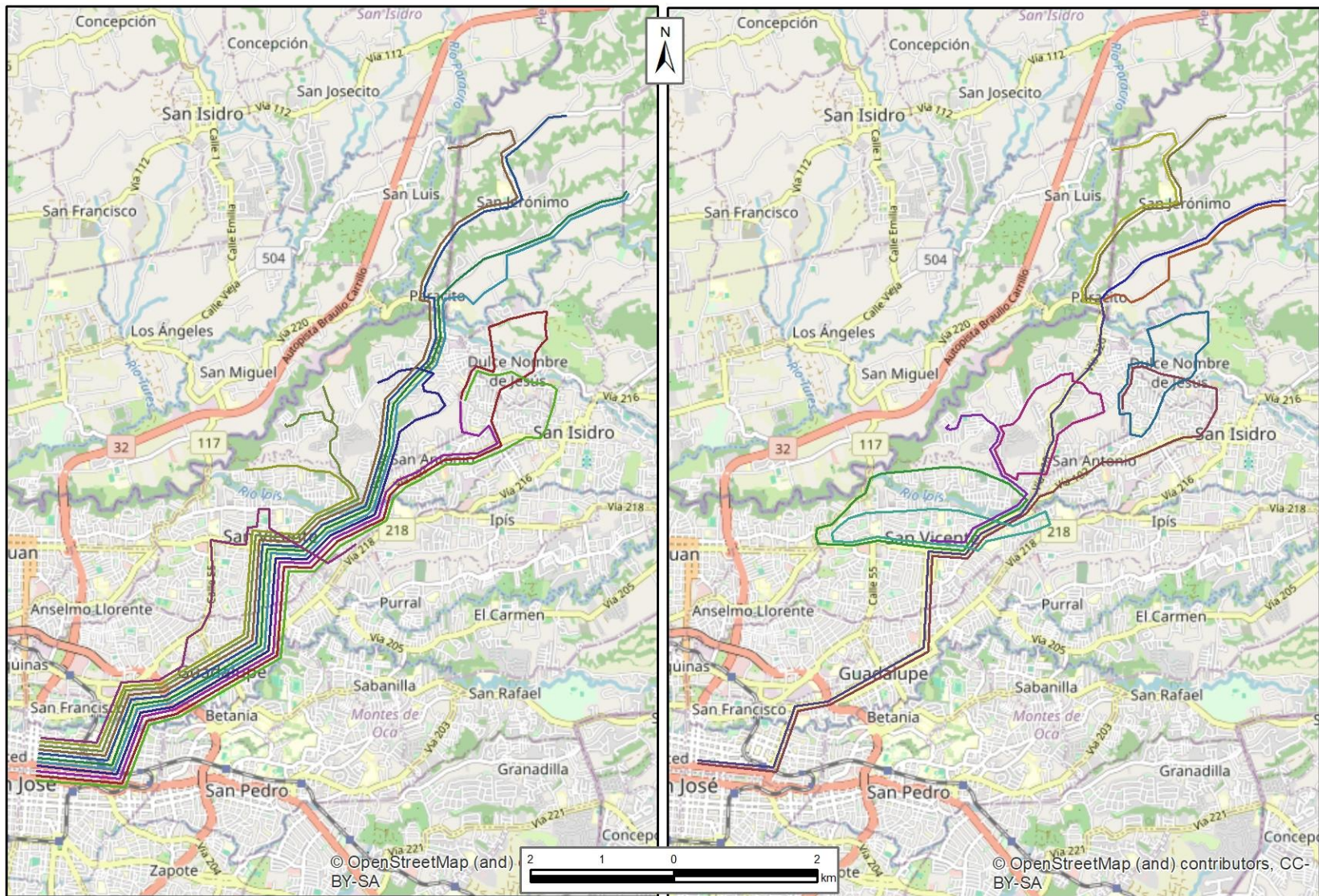


Figure 16. Moravia – Paracito transit zone redesign

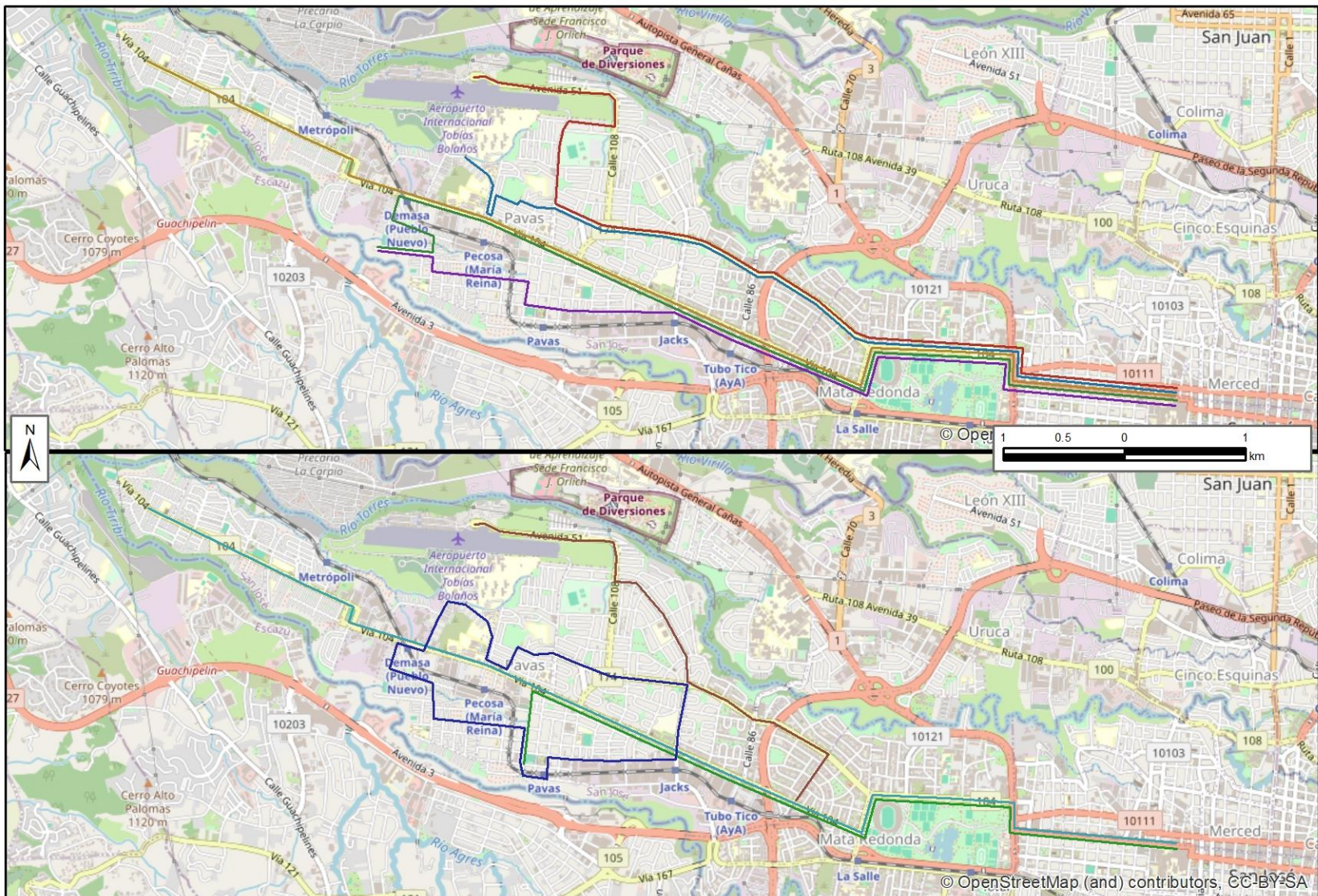


Figure 17. Pavas transit zone redesign

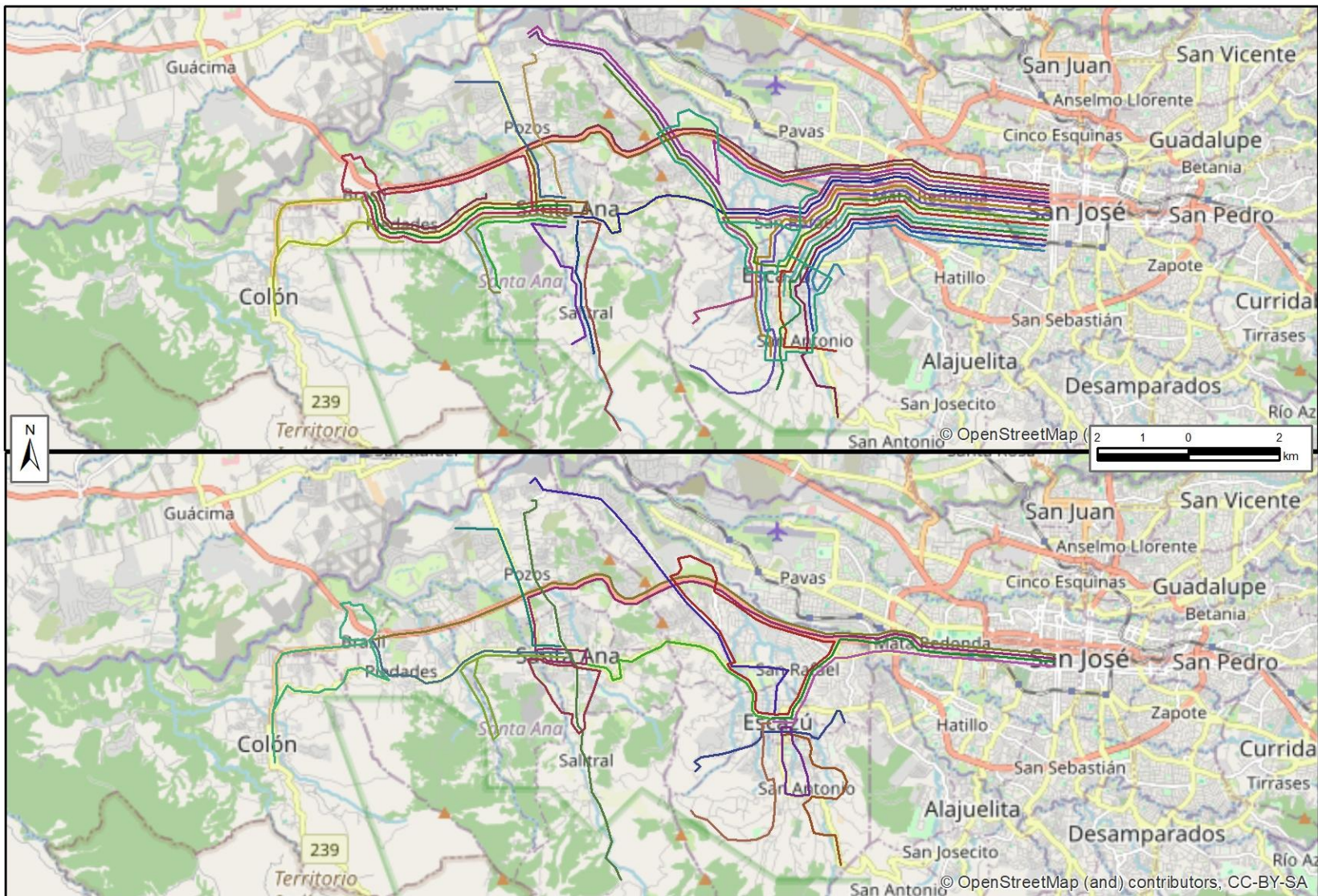


Figure 18. Escazú – Santa Ana transit zone redesign

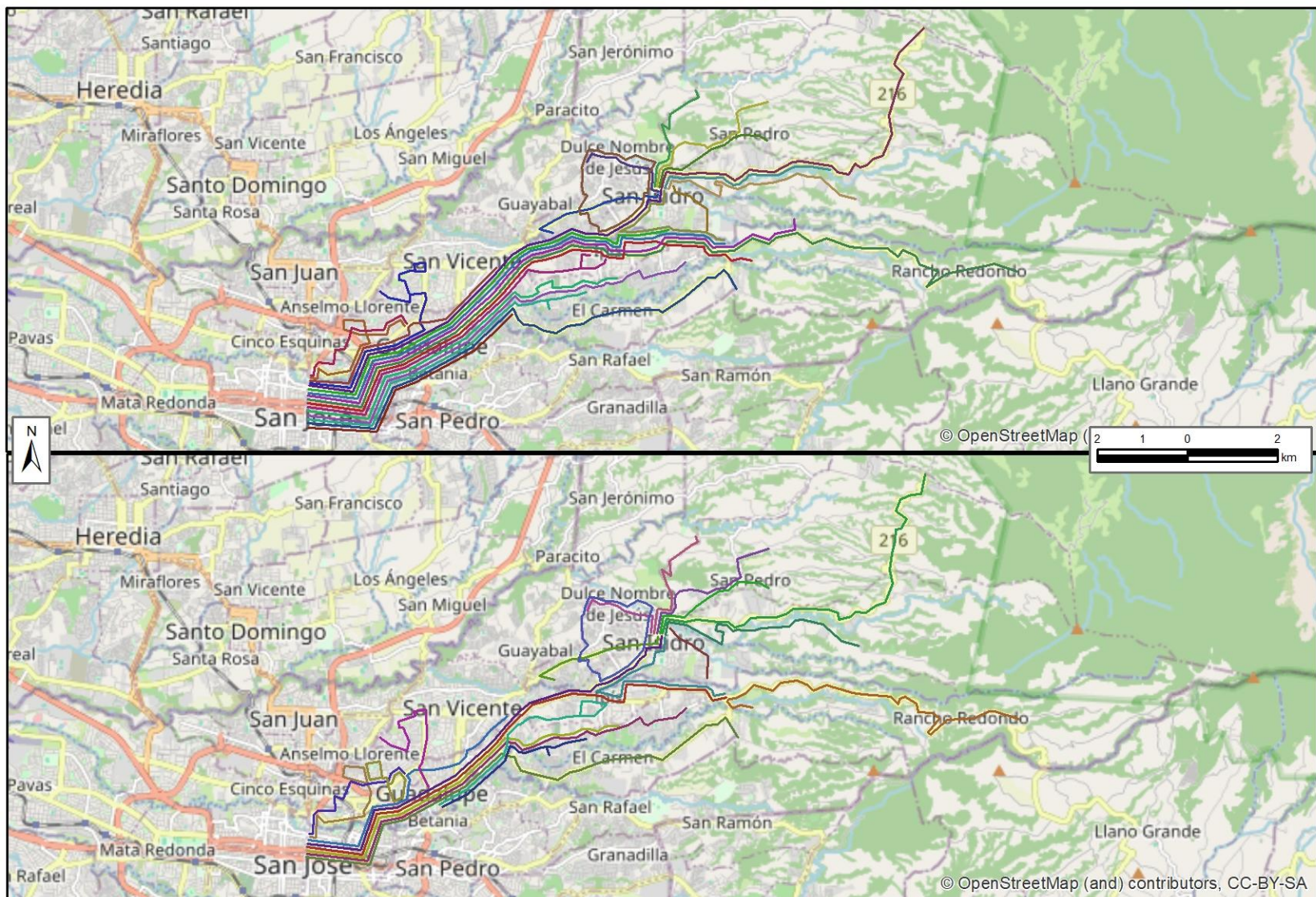


Figure 19. Guadalupe – Coronado transit zone redesign

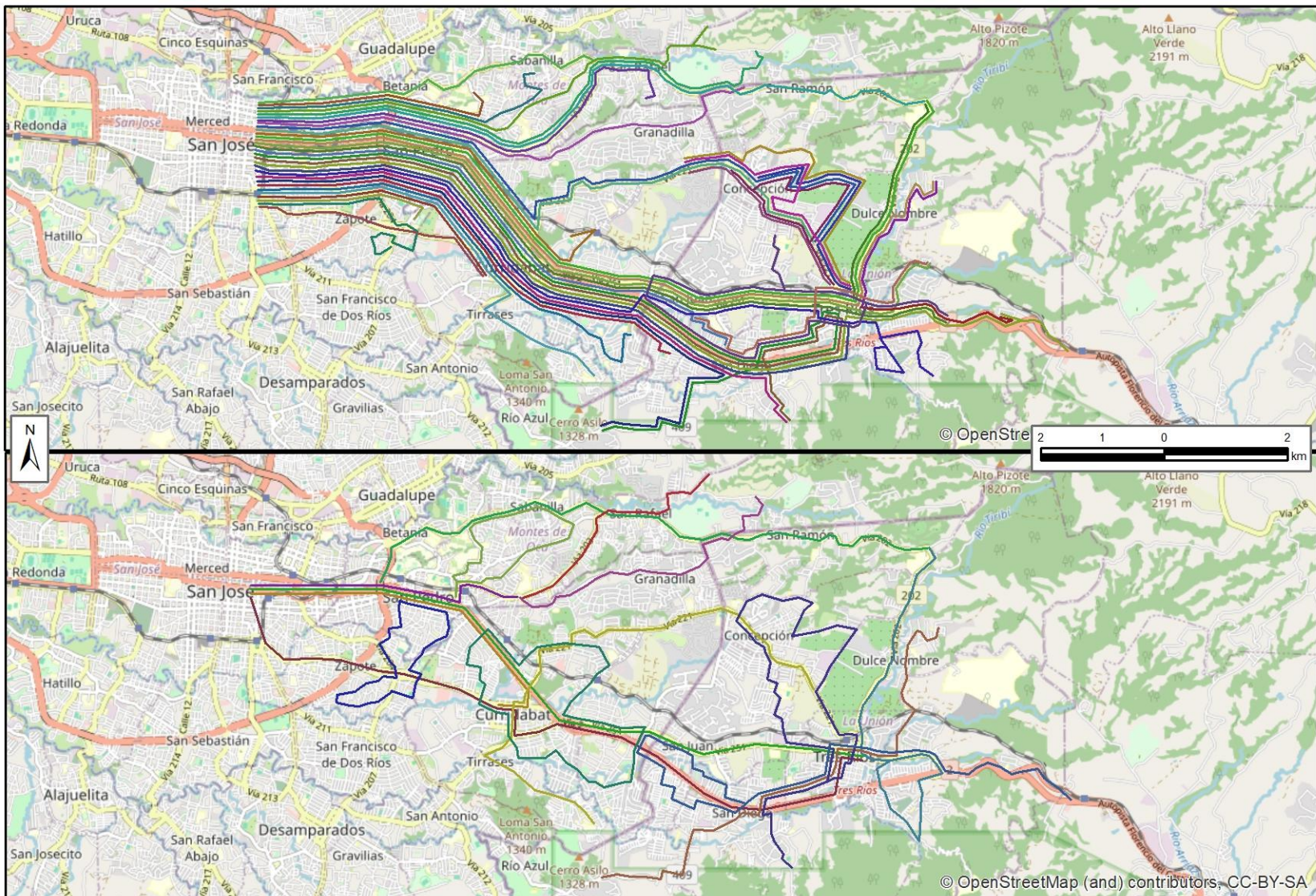


Figure 20. San Pedro – Curríabab – Tres Ríos transit zone redesign

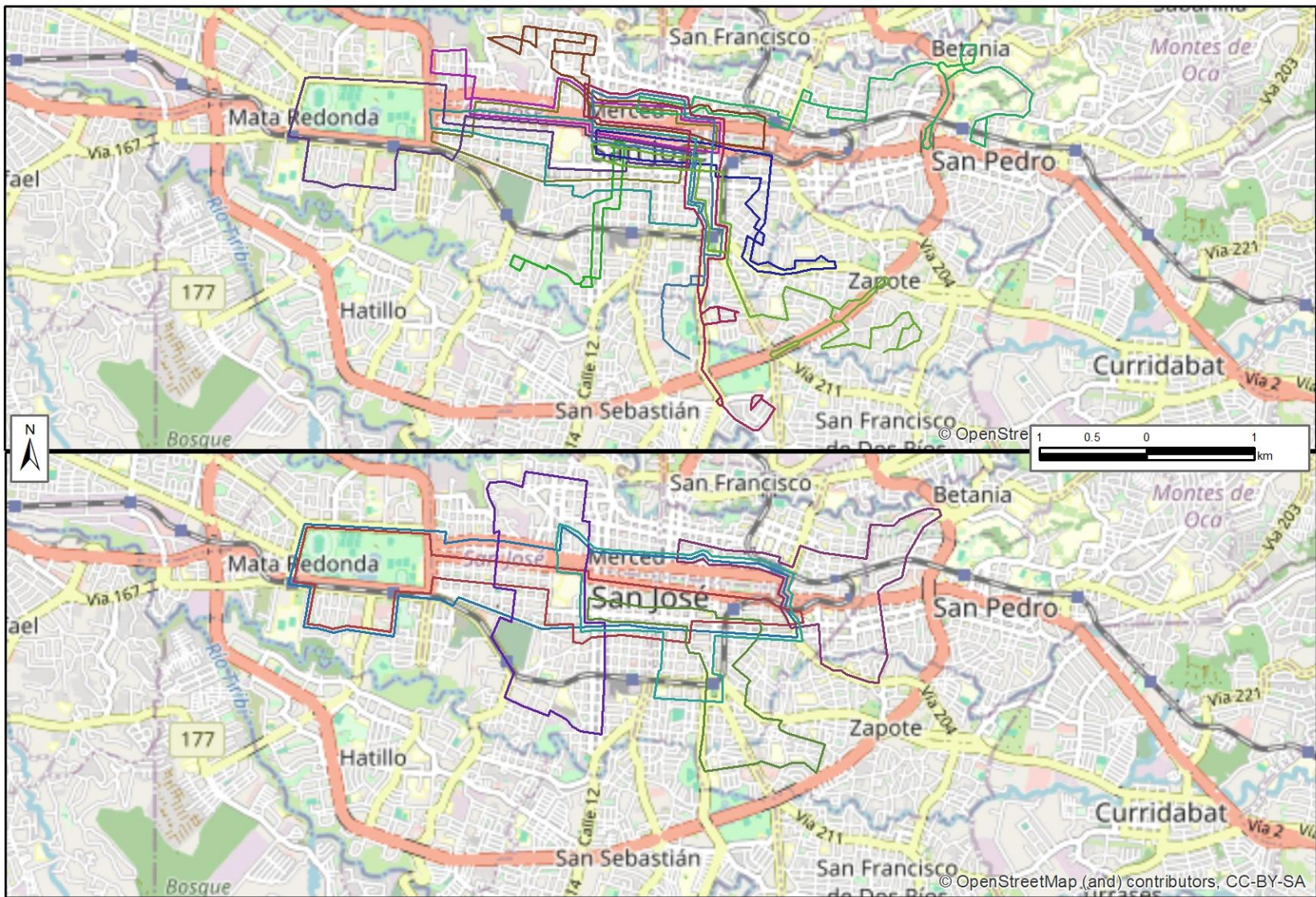


Figure 21. Central transit zone redesign.

Accessibility analysis

Having clarified the difference between the current radial transit network and the proposed trunk-feeder transit network, the next step in this research is to calculate accessibility measures. An important assumption established in the scope of this research is that the land use pattern will not change given the change in the transit system, thus all changes in accessibility will be caused by the change in the transit system and its travel times.

Travel time has different components: access time, waiting time, travel time on transit, transfer time (Vuchic, 2017). Given the change of system, it is expected that for a substantial number of trips now a transfer time will be necessary. This can be outperformed by redesigning the waiting time by reducing headways, or in the travel time on the transit units by designing more direct routes (this is a typical characteristic of the current network, a large number of routes are not direct from origin to destination, and they use to take detours along the way).

Figure 22 shows the number of jobs that can be reached in 60 minutes of travel by transit in the current radial transit network by analysis zone. The top 10 zones with the largest job accessibility are all located in downtown, this outcome is logical given that downtown has one of the biggest job density in the city, and by its geographical position it has a relatively equal distance to all the peripheries, also this is the only zone of the city that has a transit route connecting to all neighborhoods in the city. On the other hand, the 10 zones with the lowest job accessibility are all located on the edges of the city, they are zones with low frequency of transit and long distances to the rest of the city.

Figure 23 shows the number of jobs that can be reached in 60 minutes of travel by transit in the proposed trunk-feeder transit network by analysis zone. For this case the tendency is the same, the highest accessibility downtown, and the lowest accessibility in the edges, but it's not precisely the same zones or the exact number of jobs.

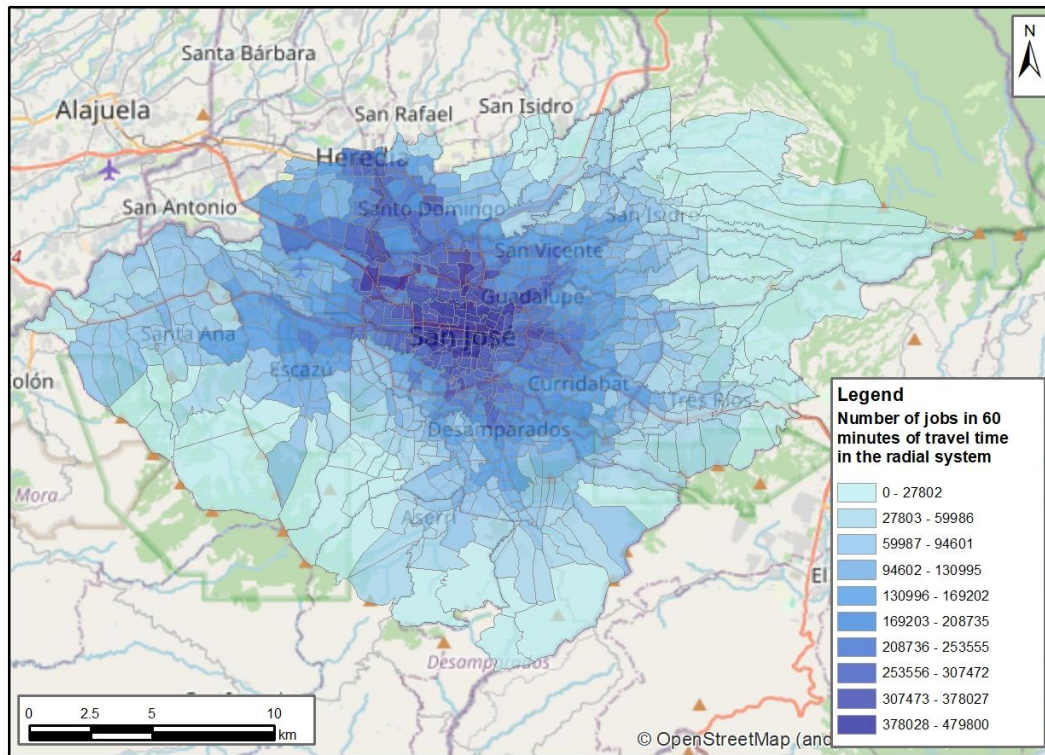


Figure 22. Number of jobs for the current radial transit network

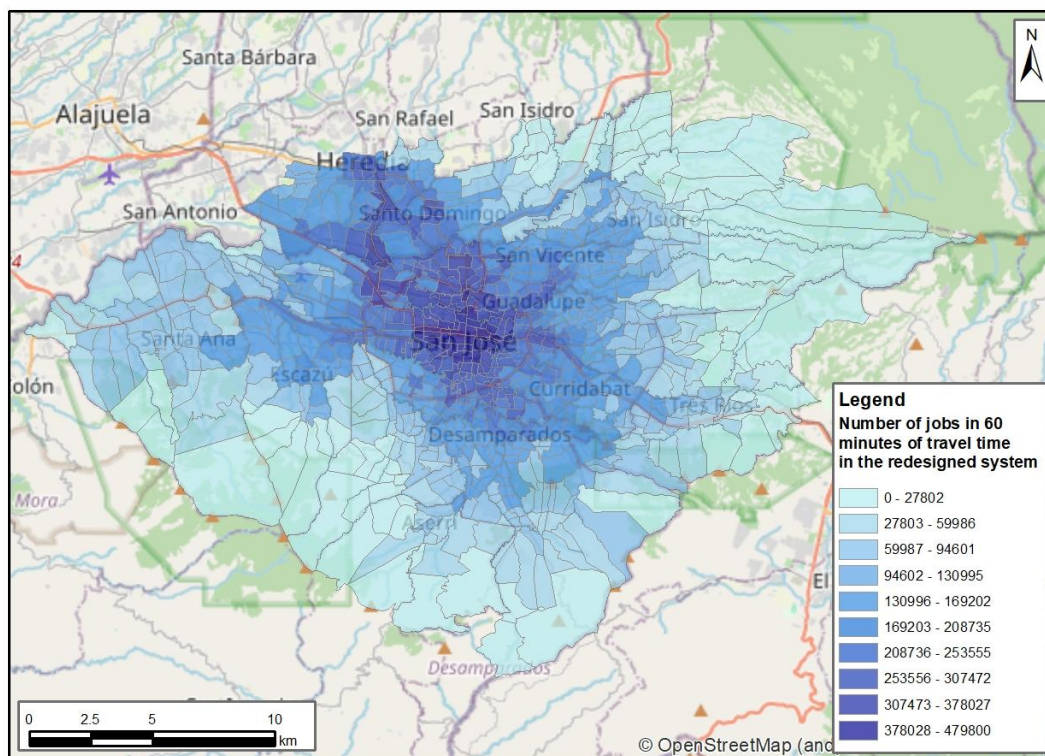


Figure 23. Number of jobs for the proposed trunk-feeder transit network

Figure 24 shows the difference in job accessibility by percentage of change, as explained in the methodology, by zone. The zones with the biggest impact on job accessibility, both positive and negative, are all located near the edges of the city, this depends totally on the redesign. MOPT designed the frequencies of the routes based on the current ridership, so most likely the zones with positive impacts have a high ridership, while the zones with negative impacts might have a low ridership. Another source of the impact is that the zones in the edges have lower accessibility measures, thus any change in the number of jobs implies a bigger impact in percentage terms compared to absolute terms.

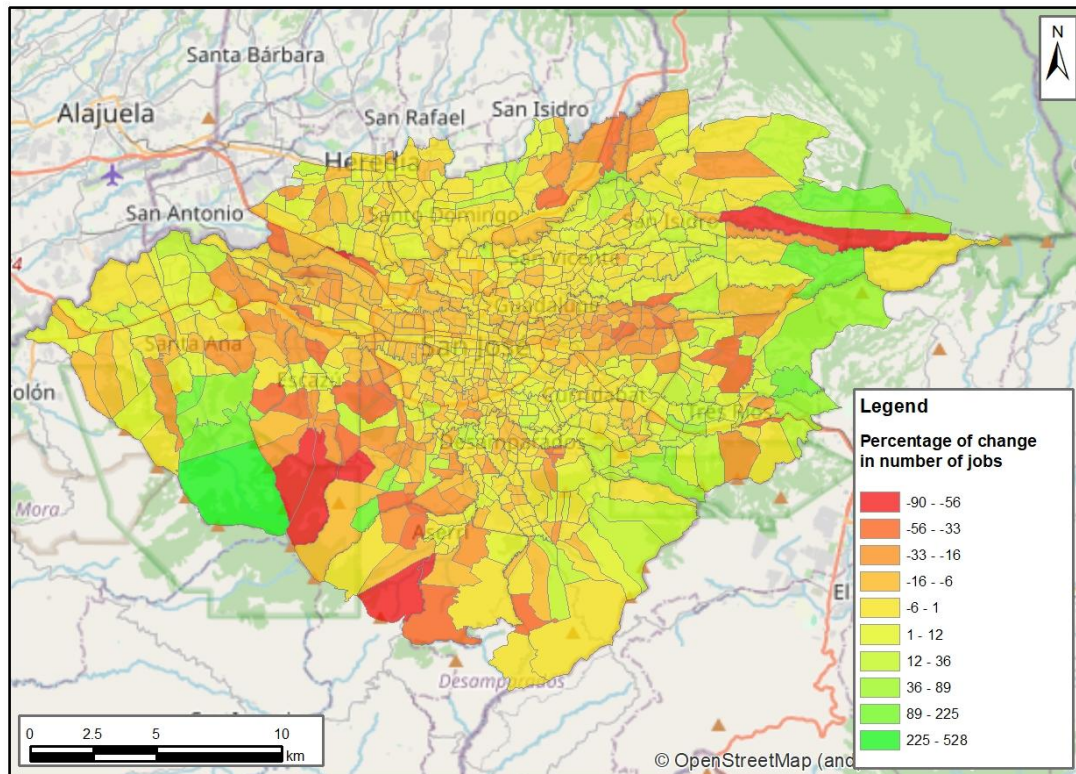


Figure 24. Percentage of change in number of jobs for both networks compared.

The next opportunity to be analyzed is the square meters of recreational facilities that can be reached in 60 minutes of travel by transit. Figure 25 and Figure 26 show this recreation accessibility indicator. The density distribution of this opportunity is very similar to the jobs one, so the accessibility distribution is very similar too, the highest accessibility is in downtown, while the lowest accessibility in the edges of the city, for both networks.

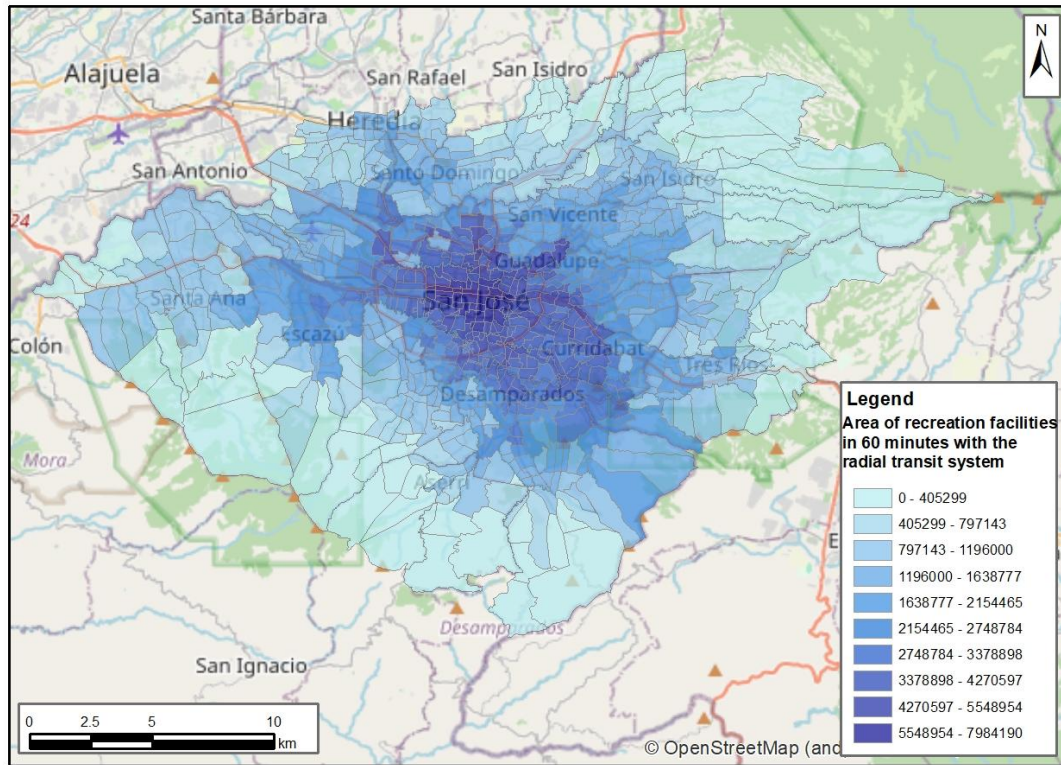


Figure 25. Square meters of recreation facilities in the radial network

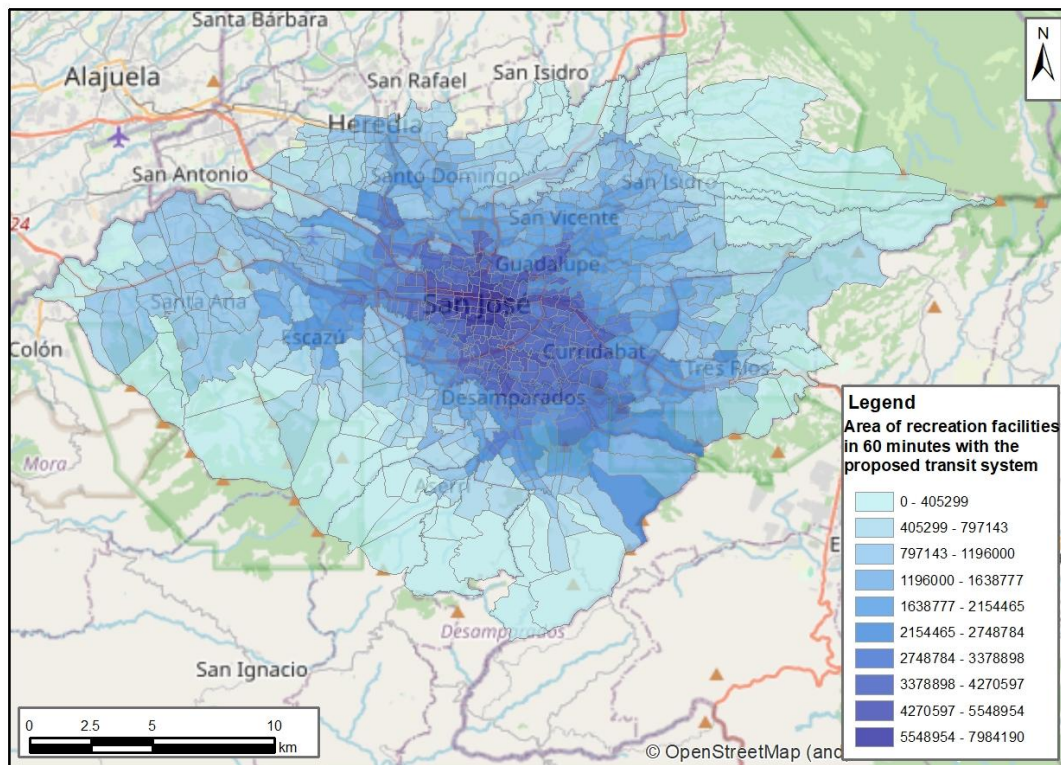


Figure 26. Square meters of recreation facilities in the trunk-feeder network

Figure 27 shows the percentage of change in recreation accessibility for both networks compared. Again, the zones with highest and lowest recreation accessibility are near the edges of the city, the reason for this is the same as in the case of jobs, it depends on the redesign made and the low numbers of the accessibility indicator in the edges.

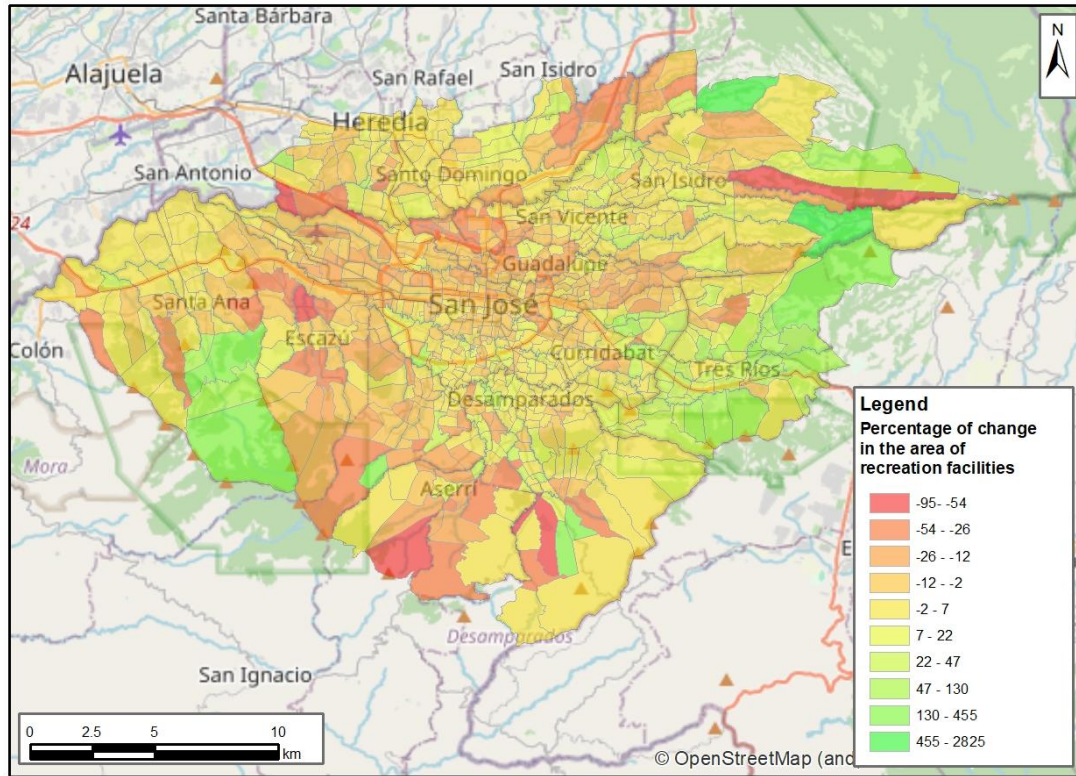


Figure 27. Percentage of change in the square meters of recreation facilities for both systems compared.

The square meters of universities reachable in 60 minutes of travel by transit will be analyzed next. For this opportunity the zones with the highest accessibility are in downtown and a little north from it, this is a logical outcome, as these zones are located between the two biggest universities poles (San Pedro and Heredia), which gives this zones access to both poles. The lowest accessibility is on the edges of the city, as these zones are very far from the universities, they cannot reach any university in 60 minutes. This distribution follows the same pattern for both networks, as shown in Figure 28 and Figure 29.

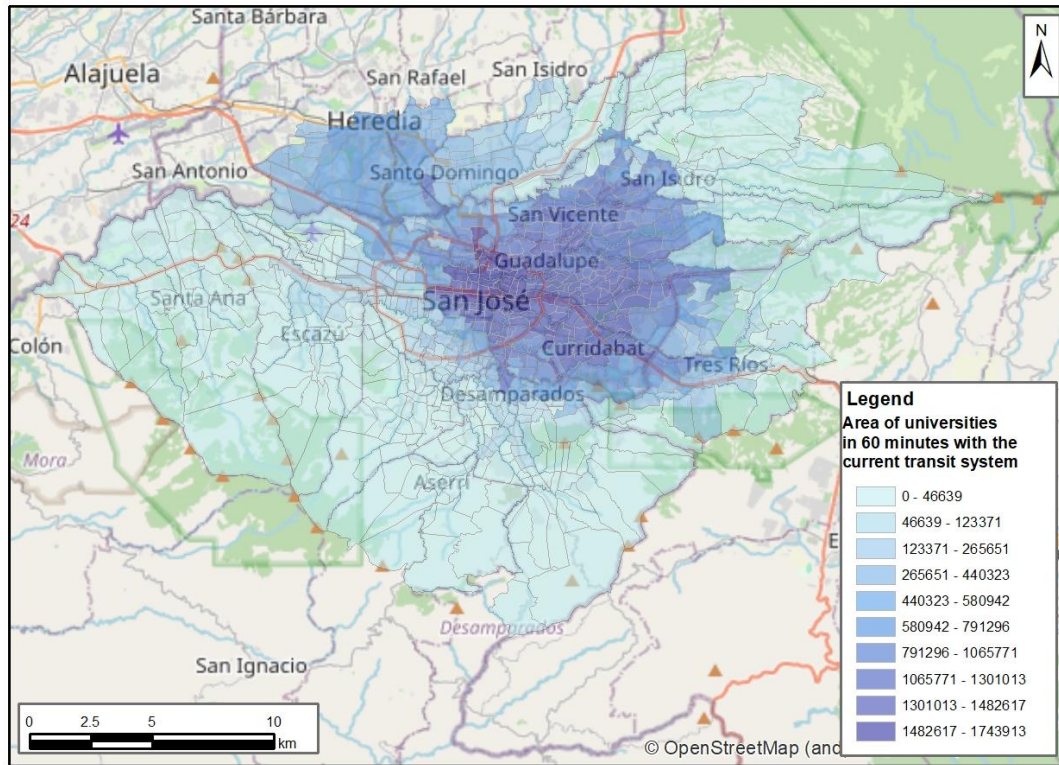


Figure 28. Square meters of universities in the radial system

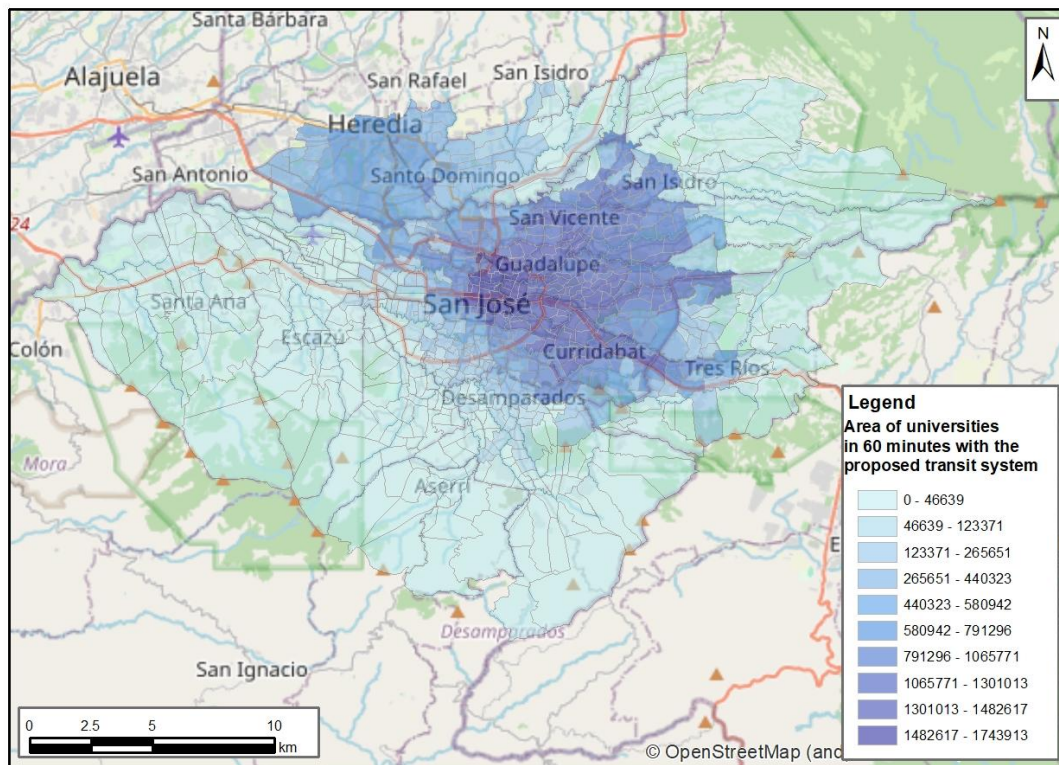


Figure 29. Square meters of universities in the trunk-feeder system.

Figure 30 shows the percentage of change in universities accessibility for both systems compared. For this case the patterns repeat themselves, the highest and lowest changes are in the peripheries, as this depends on the redesign made and the lower number of the indicator in these zones.

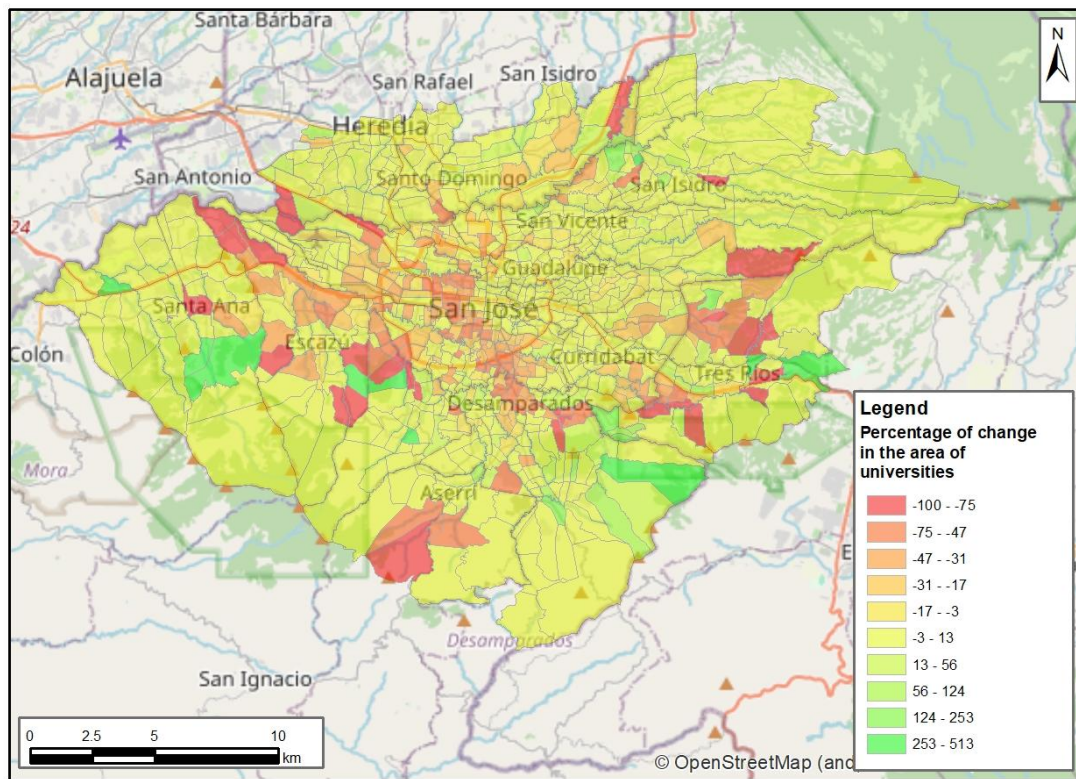


Figure 30. Percentage of change in the universities accessibility for both networks compared.

Finally, the last indicator to be analyzed is the square meters of public healthcare facilities that can be reached within 60 minutes of travel time by transit. For this opportunity the zones with highest accessibility are near two of the biggest hospitals in the city (San Juan de Dios and México). While the zones with the lowest healthcare accessibility are on the edges of the city, for its longer travel times. These patterns are the same for both systems, as shown in Figure 31 and Figure 32.

Figure 33 shows the percentage of change for both networks compared. And for a fourth time both highest and lowest changes are near the edges, and for the same reasons mentioned above for the other opportunities.

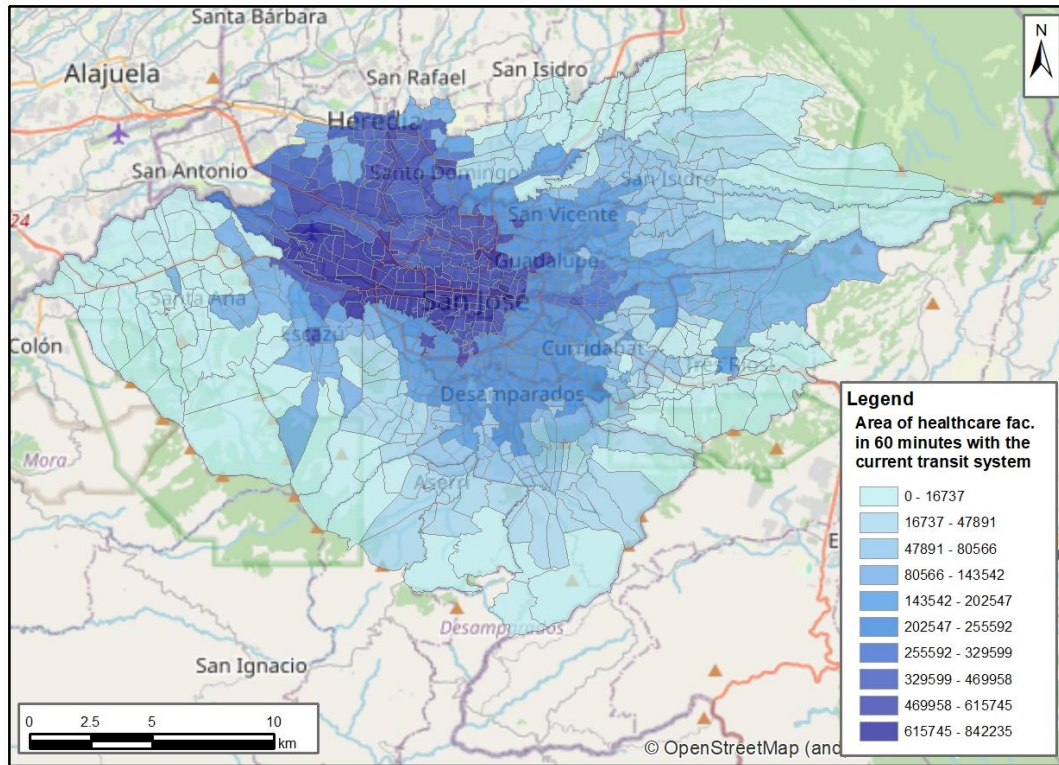


Figure 31. Square meters of public healthcare facilities in the radial network

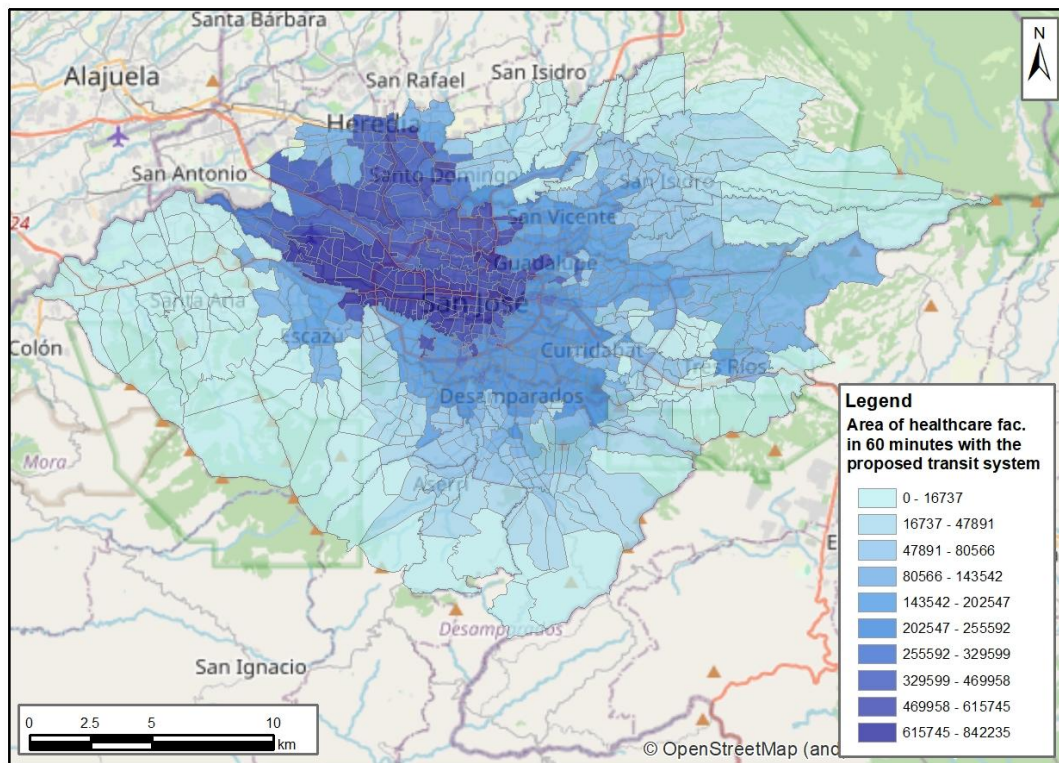


Figure 32. Square meters of public healthcare facilities in the trunk-feeder network

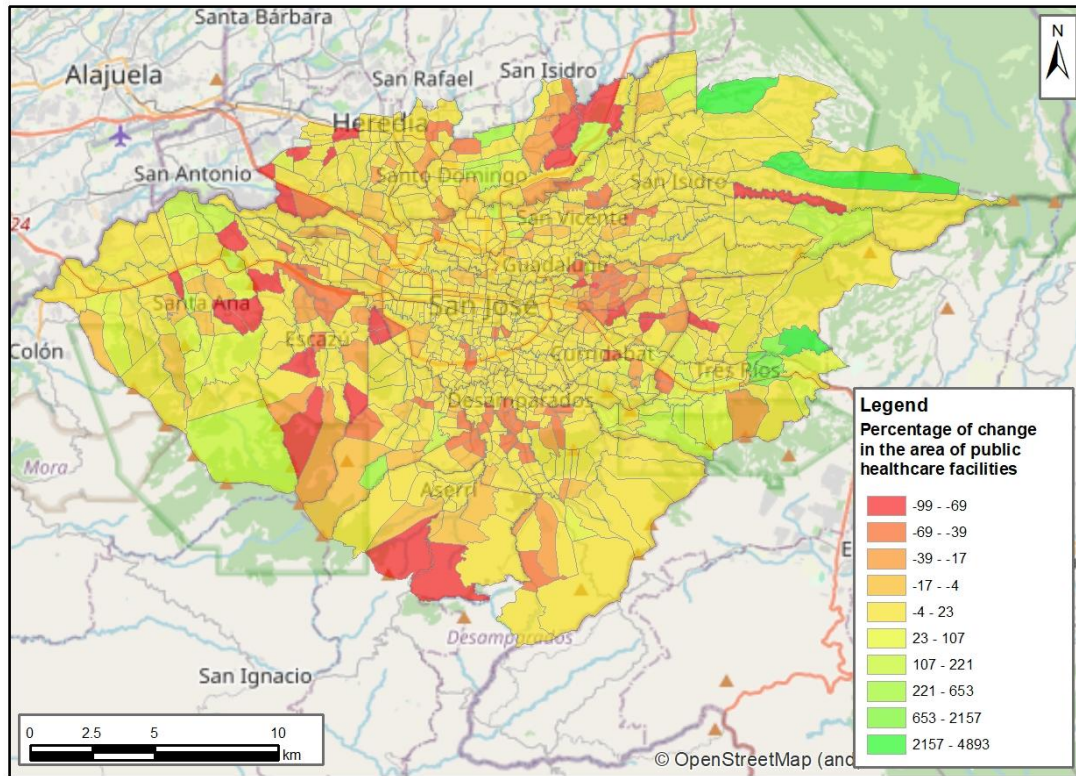


Figure 33. Percentage of change in the healthcare accessibility for both systems compared.

As explained previously, to have an indicator to make an overall comparison a weighted average was calculated by opportunity, using the population of each zone as the weighting factor. Table 4 to Table 7 show these averages.

Table 4. Accessibility indicators for employment

Transit zone	Percentage of change	Number of jobs (radial)	Number of jobs (trunk-feeder)
San Francisco	4.25	174406	181809
Escazú - Santa Ana	-8.64	213883	195408
San Sebastián - Paso Ancho	-5.22	164321	155746
Tibás - Santo Domingo	-2.44	199886	195005
Moravia - Paracito	2.08	176640	180311
San Pedro - Curridabat - Tres Ríos	-6.31	54125	50710
Guadalupe - Coronado	-2.55	123313	120171

Transit zone	Percentage of change	Number of jobs (radial)	Number of jobs (trunk-feeder)
Uruca - Heredia Sur	-5.97	81706	76825
Desamparados	-6.32	49354	46234
Hatillo - Alajuelita	-10.10	169156	152077
Central	-4.56	250574	239137
Pavas	-12.46	71773	62827
Total	-5.24	144627	137055

Table 5. Accessibility indicators for recreation

Transit zone	Percentage of change	m ² of recreation facilities (radial)	m ² of recreation facilities (trunk-feeder)
San Francisco	4.56	3012717	3149955
Escazú - Santa Ana	4.66	1232328	1289715
San Sebastián - Paso Ancho	-2.56	1770806	1725426
Tibás - Santo Domingo	4.91	2024084	2123395
Moravia - Paracito	-10.91	1353872	1206157
San Pedro - Curridabat - Tres Ríos	-11.62	1876140	1658083
Guadalupe - Coronado	-5.95	4894903	4603520
Uruca - Heredia Sur	0.72	1678817	1690920
Desamparados	0.75	2045065	2060386
Hatillo - Alajuelita	-12.65	1435416	1253806
Central	1.95	1589264	1620233
Pavas	-9.32	1668235	1512801
Total	-2.56	1918864	1869765

Table 6. Accessibility indicators for universities

Transit zone	Percentage of change	m ² of universities (radial)	m ² of universities (trunk-feeder)
San Francisco	-3.57	592136	570983
Escazú - Santa Ana	4.71	701081	734113
San Sebastián - Paso Ancho	0.27	916156	918644
Tibás - Santo Domingo	-5.82	846083	796855
Moravia - Paracito	-25.28	24179	18066
San Pedro - Curridabat - Tres Ríos	-4.81	582666	554619
Guadalupe - Coronado	-25.91	1022716	757690
Uruca - Heredia Sur	-39.76	101444	61113
Desamparados	-23.91	115034	87527
Hatillo - Alajuelita	-8.67	436864	398989
Central	-15.67	50375	42482
Pavas	-8.45	41986	38437
Total	-7.16	457448	424688

Table 7. Accessibility indicators for healthcare facilities

Transit zone	Percentage of change	m ² of healthcare facilities (radial)	m ² of healthcare facilities (trunk-feeder)
San Francisco	2.68	153288	157398
Escazú - Santa Ana	-4.10	111393	106829
San Sebastián - Paso Ancho	-3.98	151462	145440
Tibás - Santo Domingo	-10.22	126729	113779
Moravia - Paracito	-33.10	116378	77851

Transit zone	Percentage of change	m ² of healthcare facilities (radial)	m ² of healthcare facilities (trunk-feeder)
San Pedro - Curridabat - Tres Ríos	-1.73	345363	339399
Guadalupe - Coronado	-1.95	596144	584513
Uruca - Heredia Sur	-17.02	98431	81681
Desamparados	-12.74	205565	179377
Hatillo - Alajuelita	-9.79	395195	356500
Central	-11.88	153672	135413
Pavas	-9.12	530781	482360
Total	-8.36	225321	206488

For the employment opportunity only two transit zones have positive impacts (San Francisco and Moravia – Paracito); half of the zones have positive impacts for recreation facilities; The Escazú – Santa Ana and San Sebastián – Paso Ancho zones are the only ones with positive impacts for universities accessibility; and finally, for the case of accessibility to healthcare facilities the only zone with a positive impact is San Francisco.

The overall impact of the change in jobs is a reduction of 5% and a 7% reduction in universities, while recreation has a reduction of 2%, and healthcare an 8%. Given these results, under these conditions it is not advisable for the Ministry to implement the change of the network, it will increase the total travel times of the citizens for some of the destinies. With the redesign proposed, the frequencies designed, and the linearity of the routes are not enough to compensate for the increase in transfer time. Nevertheless, some changes can be made to the redesign proposal and achieve a positive impact, this will be presented in the next section.

Redesign improvements

The network redesign made by MOPT was assessed using efficiency indicators, e.g. fleet size. A trunk-feeder system is more efficient because not all routes go downtown, where the average speeds are lower, this gives room for fleet reduction keeping the same frequencies. Therefore, the improvements in this section will be based on the improvement of the headways until the fleet meets the current one. Table 8 shows the fleet sizes of all scenarios. Only the Hatillo – Alajuelita

transit zone did not have room for fleet increase, also in the Guadalupe – Coronado transit zone the difference in fleet was too little for such a large zone to be able to accommodate a bigger one.

Table 8. Fleet sizes

Transit zone	Current fleet*	Redesigned fleet	Redesign improvement fleet
San Francisco	70	62	70
Moravia - Paracito	66	63	66
Guadalupe - Coronado	162	156	156
San Pedro - Curridabat - Tres Ríos	206	178	206
Escazú - Santa Ana	160	125	160
Tibás - Santo Domingo	95	85	95
Central	77	36	77
Desamparados	166	142	166
San Sebastián - Paso Ancho	97	73	97
Uruca - Heredia Sur	190	135	190
Hatillo - Alajuelita	86	87	87
Pavas	71	52	69
Total	1446	1194	1439

Source: CTP (2024), MOPT (2024a-c, 2023a-i)

*Note: as was explained before, some routes can apply a reduction between 0% and 30% of their fleet, the maximum reduction of 30% was applied to all cases that can do it.

To redesign the headways on each transit zone the analysis zones with the biggest negative impacts were identified, as well as the routes that are in those zones to be prioritized for headway improvement. E.g. In the Escazú – Santa Ana transit zone the most affected analysis zones were El Carmen, Juan Santana, Alto Carrizal and Bello Horizonte Sur (with impacts over 40%), and the routes in those areas are E8, E9 and E11, so these three ones were the first ones to have headway improvement. Then, if there was still room in the fleet, the improvement was applied to the next ones with largest impacts. Table 9 shows the headways used in each scenario, where the entries in green show the headways changed.

Table 9. Headways for each scenario

Transit zone	Route	Redesign headway (min)	Redesign improvement headway (min)	Transit zone	Route	Redesign headway (min)	Redesign improvement headway (min)
Desamparados	D1	3	3	Central	C1	12	5
	D2	4	4		C2	15	5
	D3	3	3		C3	12	7.5
	D4	5	5		C4	15	7.5
	D5	30	8.57		C5	15	7.5
	D6	20	10		C6	15	6
	D7	12	8.57	Pavas	P1	6	4
	D8	30	10		P2	6	4
	D9	15	8.57		P3	15	4
	D10	20	10		P4	15	10
	D11	20	6	San Sebastián - Paso Ancho	S1	6	4
	D12	12	6		S2	3	3
	D13	20	12		S3	6	5
Escazú - Santa Ana	E1	10	7.5		S4	15	5
	E2	4	3.2		S5	10	5
	E3	3.5	3.5		S6	10	5
	E4	15	12		S7	15	6
	E5	4.6	4		S8	30	6
	E6	6	5	San Pedro - Curridabat - Tres Ríos	R1	6	6
	E7	20	15		R2	3	3
	E8	20	15		R3	3	3
	E9	30	12		R4	4	4

Transit zone	Route	Redesign headway (min)	Redesign improvement headway (min)	Transit zone	Route	Redesign headway (min)	Redesign improvement headway (min)
	E10	15	15		R5	12	12
	E11	15	5		R6	20	10
	E12	5	4		R7	10	10
	E13	30	20		R8	6	4
	E14	30	12		R9	6	5
	E15	20	15		R10	30	30
	E16	20	15		R11	12	6
	E17	30	15		R12	10	8.57
Guadalupe - Coronado	G1	6	6		R13	20	7.5
	G2	6.7	6.7		R14	15	15
	G3	5	5		R15	12	7.5
	G4	8.6	8.6	Tibás - Santo Domingo	T1	4	4
	G5	6.7	6.7		T2	20	12
	G6	10	10		T3	20	20
	G7	15	15		T4	20	20
	G8	30	30		T5	30	15
	G9	15	15		T6	8.6	8.6
	G10	10	10		T7	10	10
	G11	30	30		T8	15	15
	G12	30	30		T9	15	12
	G13	60	60		T10	30	15
	G14	30	30		T11	30	30

Transit zone	Route	Redesign headway (min)	Redesign improvement headway (min)	Transit zone	Route	Redesign headway (min)	Redesign improvement headway (min)
	G15	30	30		T12	30	12
	G16	30	30		T13	30	30
	G17	30	30		T14	20	20
	G18	60	60		T15	20	20
	G19	60	60		T16	30	20
	G20	60	60	Uruca - Heredia Sur	H1	3	3
	G21	60	60		H2	6	3
	G22	20	20		H3	3	3
	G23	15	15		H4	4	2.5
Hatillo - Alajuelita	A1	5	5		H5	30	8.57
	A2	3	3		H6	6	5
	A3	6	6		H7	15	12
	A4	20	20		H8	15	10
	A5	10	10		H9	10	4
	A6	30	30		H10	15	5
	A7	20	20		H11	15	5
	A8	20	20	Moravia - Paracito	M1	5	5
	A9	12	12		M2	4.3	4.3
	A10	20	20		M3	30	30
San Francisco	F1	10	8.6		M4	20	20
	F2	7.5	6		M5	30	30
	F3	8.6	7.5		M6	15	15
	F4	10	10		M7	30	30

Transit zone	Route	Redesign headway (min)	Redesign improvement headway (min)	Transit zone	Route	Redesign headway (min)	Redesign improvement headway (min)
	F5	15	10		M8	30	30
	F6	15	15		M9	30	15
	F7	15	15		M10	30	20
	F8	30	15		M11	30	20
	F9	30	30				

Figure 34 shows the results of the number of jobs by analysis zone with the improvement in headway. The tendency of this scenario is the same as the previous two, the highest accessibility is located downtown, while the lowest one on the edges of the city, but as it occurred in the previous case the number varies.

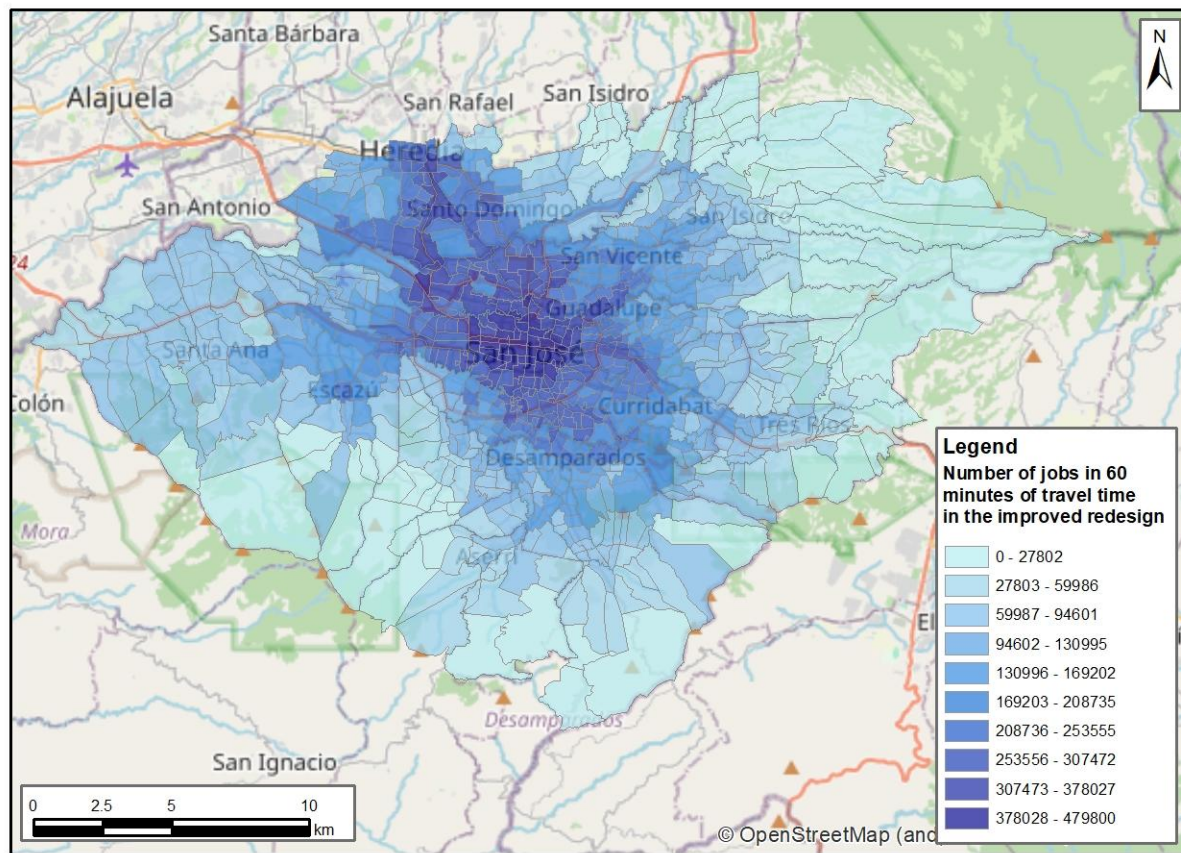


Figure 34. Accessibility measures for the improved trunk-feeder transit network

Figure 35 shows the percentage of change in the accessibility measures for the case with improved headways. The most negative impacts are on the peripheries, just like in the previous case, but not as close to the edges as before. The most positive impacts are closer to the edges, the reasons for this are the same explained for the previous case.

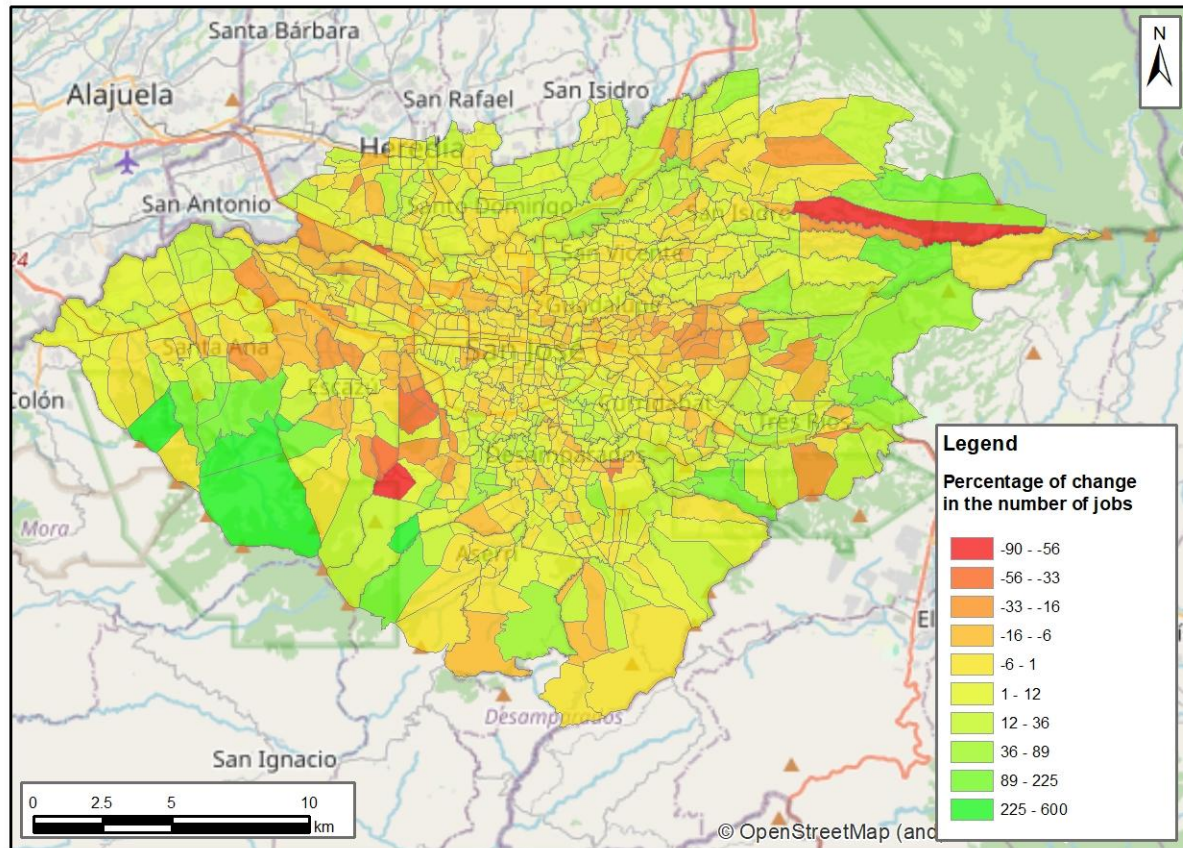


Figure 35. Percentage of change in accessibility for the improved network vs. the current one.

Figure 36 shows the square meters of recreation facilities that can be reached in 60 minutes of travel time by transit with the improved trunk-feeder system. The geographical distribution in this case is very similar to the previous ones, with the highest accessibility downtown, and the lowest accessibility on the edges of the city.

The percentage of change in square meters of recreational facilities in the improved system compared to the radial one is presented in Figure 37. There is a reduction in the number of zones with red colors, which is a good indicator of the improvement, nevertheless, the distribution is the same, the most extreme values (positive and negative) are close to the edges of the city.

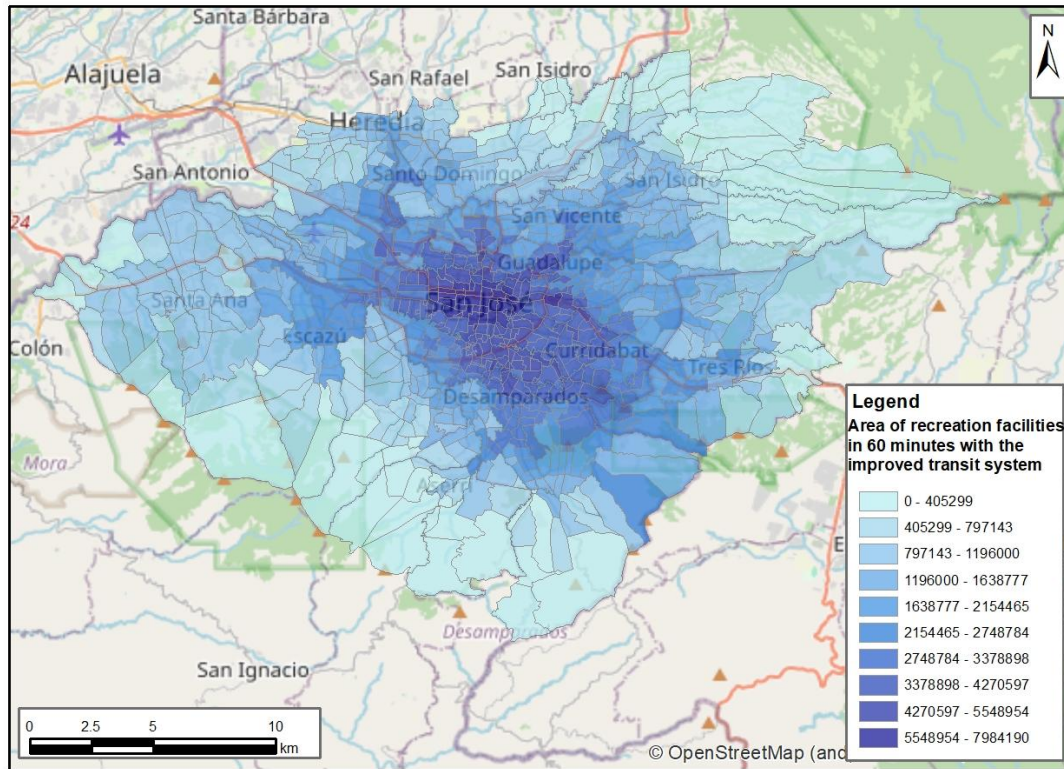


Figure 36. Square meters of recreation facilities in the improved network

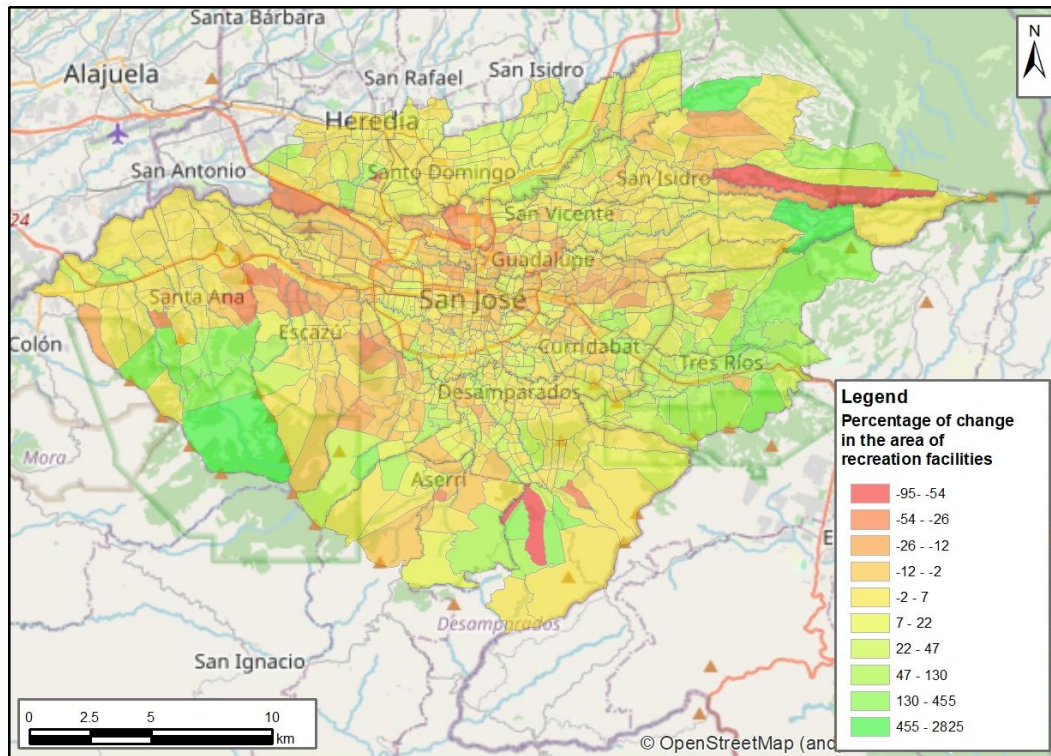


Figure 37. Percentage of change in recreation facilities accessibility with the improved network

Figure 38 shows the square meters of universities that can be reached in 60 minutes of travel time by transit with the improved trunk-feeder system. The distribution is the same, the highest accessibility is between the two universities poles (San Pedro and Heredia), while the lowest accessibility is in the peripheries, with a substantial number of zones with a value of zero.

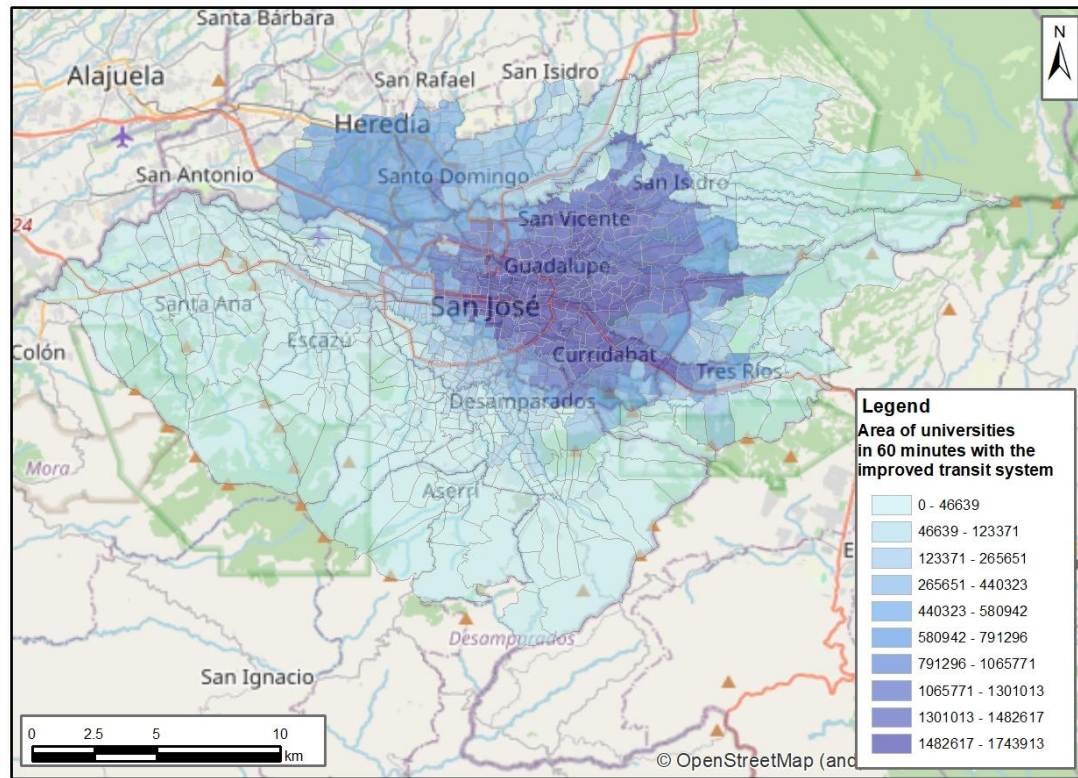


Figure 38. Square meters of universities in the improved network

The percentage of change in universities' accessibility of the improved redesigned network compared with the current one is presented in Figure 39. For this case, as well as in the previous ones, the largest changes are in the peripheries, but with more green zones, which gives a hint of the improvement in the indicator.

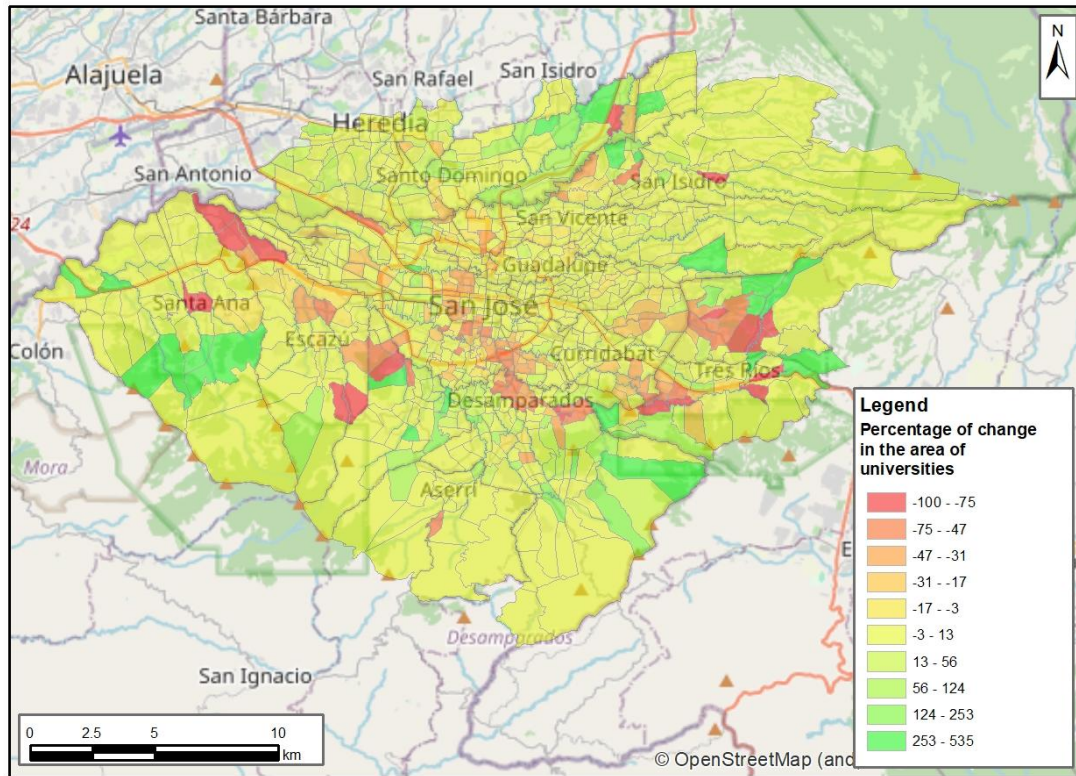


Figure 39. Percentage of change in universities' accessibility in the improved network.

The number of square meters that can be reached in 60 minutes of travel time by transit in the improved network is presented in Figure 40. It follows the same pattern of the other scenarios, the highest accessibility is near the main hospitals in the city (San Juan de Dios and México), while the lowest is on the edges of the city.

Figure 41 shows the percentage of change in public healthcare accessibility in the improved trunk-feeder system compared to the radial one. The greatest changes are in near the edges of the city, once again due to the lower values in these zones, nevertheless, once again there are less zones in red colors, which proves the improvement of the indicator.

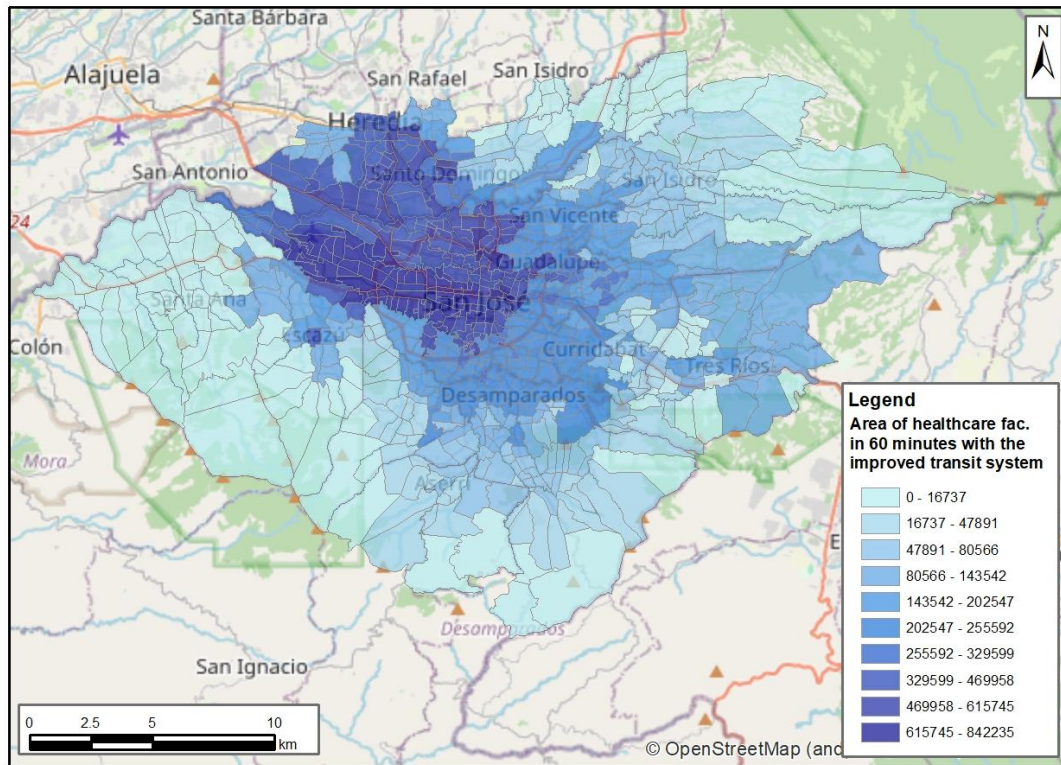


Figure 40. Square meters of healthcare facilities for the improved system

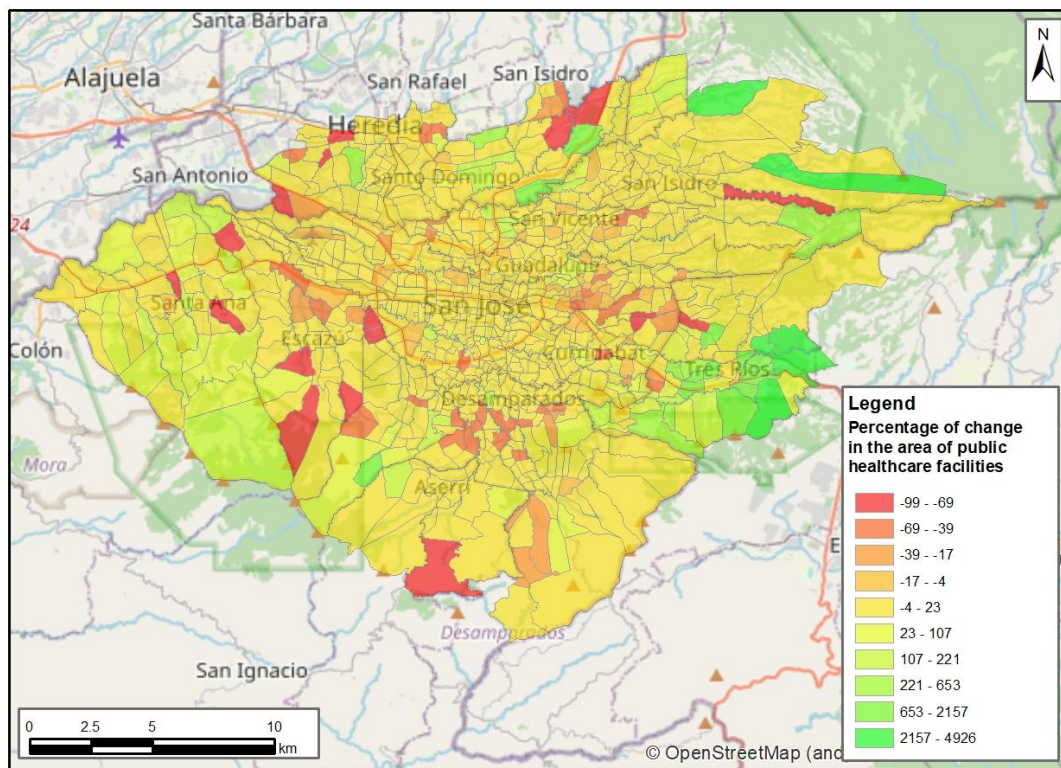


Figure 41. Percentage of change in healthcare accessibility in the improved system

Finally, to have an overall indicator the weighted average was calculated for transit zone and for all the city, this outcome is presented in Table 10 to Table 13. For this case eight zones have positive impacts on the employment opportunity; seven zones with positive impacts in the recreation facilities accessibility; four transit zones resulted with positive impacts on the universities opportunity; while the healthcare facilities accessibility has five zones with positive impacts. The overall indicators are positive for the cases of jobs and recreation; the universities and healthcare accessibility are still negative but with a significant reduction in magnitude. These outcomes proved that the improvement of the headways made the waiting time compensate for the transfer time, under this condition it is possible to recommend the implementation of the redesign project.

Table 10. Accessibility indicators for employment (improved)

Transit zone	Percentage of change	Number of jobs (radial)	Number of jobs (trunk-feeder improved)
San Francisco	10.54	174406	192793
Escazú - Santa Ana	1.48	213883	217047
San Sebastián - Paso Ancho	5.91	164321	174029
Tibás - Santo Domingo	4.33	199886	208537
Moravia - Paracito	4.50	176640	184587
San Pedro - Curridabat - Tres Ríos	-1.12	54125	53520
Guadalupe - Coronado	0.02	123313	123332
Uruca - Heredia Sur	2.02	81706	83360
Desamparados	-0.77	49354	48974
Hatillo - Alajuelita	-4.55	169156	161456
Central	0.13	250574	250889
Pavas	-3.83	71773	69023
Total	1.27	144627	146466

Table 11. Accessibility indicators for recreation facilities (improved)

Transit zone	Percentage of change	m ² of recreation facilities (radial)	m ² of recreation facilities (trunk-feeder improved)
San Francisco	8.77	3012717	3276885
Escazú - Santa Ana	8.46	1232328	1336553
San Sebastián - Paso Ancho	1.63	1770806	1799588
Tibás - Santo Domingo	11.44	2024084	2255675
Moravia - Paracito	-1.54	1353872	1333089
San Pedro - Curridabat - Tres Ríos	-4.62	1876140	1789521
Guadalupe - Coronado	-0.86	4894903	4852924
Uruca - Heredia Sur	8.51	1678817	1821740
Desamparados	7.55	2045065	2199510
Hatillo - Alajuelita	-0.12	1435416	1433692
Central	5.44	1589264	1675740
Pavas	-3.16	1668235	1615493
Total	3.85	1918864	1992647

Table 12. Accessibility indicators for universities (improved)

Transit zone	Percentage of change	m ² of universities (radial)	m ² of universities (trunk-feeder improved)
San Francisco	-1.16	592136	585290
Escazú - Santa Ana	4.85	701081	735063
San Sebastián - Paso Ancho	0.75	916156	923029
Tibás - Santo Domingo	-3.66	846083	815081
Moravia - Paracito	-11.09	24179	21497

Transit zone	Percentage of change	m ² of universities (radial)	m ² of universities (trunk-feeder improved)
San Pedro - Curridabat - Tres Ríos	0.98	582666	588363
Guadalupe - Coronado	-13.73	1022716	882295
Uruca - Heredia Sur	-34.95	101444	65991
Desamparados	-12.99	115034	100093
Hatillo - Alajuelita	9.62	436864	478899
Central	-6.39	50375	47155
Pavas	-3.06	41986	40700
Total	-2.15	457448	447618

Table 13. Accessibility indicators for healthcare facilities (improved)

Transit zone	Percentage of change	m ² of healthcare facilities (radial)	m ² of healthcare facilities (trunk-feeder improved)
San Francisco	9.75	153288	168240
Escazú - Santa Ana	0.85	111393	112335
San Sebastián - Paso Ancho	-3.37	151462	146351
Tibás - Santo Domingo	8.80	126729	137885
Moravia - Paracito	-18.72	116378	94587
San Pedro - Curridabat - Tres Ríos	4.32	345363	360283
Guadalupe - Coronado	0.17	596144	597162
Uruca - Heredia Sur	-9.81	98431	88779
Desamparados	-6.94	205565	191290
Hatillo - Alajuelita	-4.28	395195	378276
Central	-3.45	153672	148364

Transit zone	Percentage of change	m ² of healthcare facilities (radial)	m ² of healthcare facilities (trunk-feeder improved)
Pavas	-0.58	530781	527720
Total	-1.45	225321	222044

Conclusions and recommendations

Conclusions

This study used jobs data, census data, GTFS data (transit data), and walking network in the package R5R in RStudio to compute the number of jobs, square meters of recreation, universities and public healthcare facilities reachable in a travel time of 60 minutes. This was done for three scenarios: the current radial transit system of the city of San José, Costa Rica; the proposed trunk-feeder transit network; and an improved version of the redesigned system. The change in accessibility between scenarios was also calculated for all four opportunities.

It was found that with the implementation of the network redesign, it would result in a reduction of 5% in the job accessibility measures on average. Only the transit zones of San Francisco and Moravia – Paracito have positive impacts; the other ten transit zones have negative impacts. Nevertheless, by making some changes in the frequencies of the routes to keep the fleet size at the same number, it is possible to achieve an increase of 1.3%. In this case 8 out of 12 transit zones have positive impacts.

For the recreation facilities opportunity the average change in the redesigned network is a reduction of 2.6%, but with the improvement in headways an increase of 3.9% was obtained. In the case of the universities' accessibility the overall indicator was a reduction of 7.2%, while the improved system resulted in a reduction of only 2.2%. Finally, for the public healthcare accessibility indicator the reduction changed from 8.4% to 1.5%.

The measures calculated also have helped to portray the accessibility distribution in this city. The analysis zones with the highest job density are in downtown or are industrial zones in the peripheries, but the zones with the highest job accessibility are only in downtown, this is a logical distribution, given that downtown is the only zone with direct transit routes to all neighborhoods in the city, and for its location it has a very similar distance to all other zones. The zones with the lowest job accessibility are at the edges of the city, which is also logical given that they are the farthest zones to reach, and have transit routes with low frequencies.

The geographical distribution of recreational accessibility is very similar to the job's one, given that both have a similar density distribution in the city. For the case of universities' accessibility, the distribution is concentrated in the two biggest universities poles (San Pedro and Heredia), as well as the zones between them; also, there are several zones with a value of zero, they cannot reach any university in 60 minutes. Finally, the public healthcare accessibility is highest near the biggest hospitals in the city and the zones around them, most zones on the edges have low healthcare accessibility.

A trunk feeder system can have higher accessibility measures than a radial one when they are being compared at similar conditions. This means that the reduction of fleet of the first one should be

used to improve the headways, this way the transfer time can be compensated in the waiting time, having a smaller total time of travel.

This research is relevant to scholars interested in accessibility measures or in transit network redesigns. It lays the groundwork for the combination of both academic lines of investigation, and it is a first effort in closing the gap between them.

Recommendations

It is recommended that the Ministry of Public Works and Transportation of Costa Rica implements the redesign project, but under the condition of not reducing the fleet size, this will increase the accessibility levels of the city. Also, any future update of the project should include this condition, to keep the fleet as it is, and improve the headway. An increase of the fleet would increase even more the headways and accessibility, but it would generate a fare increase. This latter case would have to be studied more deeply, not only from an accessibility perspective, but also from a socio-economic perspective, and its implications on the ridership.

The results of this research are subject to the redesign made, any changes in the alignment of the routes, the distance between stops, headways or commercial speed may result in different accessibility levels, thus if any change is made in these parameters in another update of the project it is recommended to evaluate this final design with an accessibility approach.

To implement the project other transit alternatives can be added, such as BRTs, bus preferential lanes, express bus lines, tramways; for further research it would be recommended to analyze these alternatives with an accessibility approach. The change in accessibility provided by the improved redesign of the project may bring changes in land values and land use intensity, which might reduce the mobility needs in other zones away from the trunk's corridors, thus it would be recommended to conduct further analysis in this matter before implementing the projects.

The analysis made is subject to the change from a radial to a trunk-feeder transit system. It is recommended to study other kinds of redesigns, e.g. from radial to orthogonal networks, and many others available in other cities. This is a very important topic for future research, given that not all the results are expected to be the same as in this case.

Another important research line to be developed in the future is combining accessibility analysis with mode share data, for instance, the time travel matrix for public transit can be compared with the private-vehicles matrix and accessibility, routes and headways could be improved between the origin-destinations pairs with the largest disparities. And finally, the analysis can be done using more specific census data, disaggregating the population by age group or gender, for the city of San José such disaggregation is not available, but other case studies can be made with data from other cities.

To improve the execution of all the recommended research lines, the different transit authorities should publish their GTFS data, this could reduce the workload, and the analysis can be made

faster, being able to invest more time in the accessibility analysis, rather than preparing it. For the case of San José, the author has generated the data, and it will be available for any researcher who needs it.

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Appendix A

Table 14. Details of the different indicators by analysis zone.

Code	Name	Jobs	Jobs accessibility			Transit zone	Populati on	Recreati on square meters	Recreation accessibility			Universities square meters	Universities accessibility			Healthcare square meters	Healthcare accessibility		
			Radia l	Trunk- feeder	T-f improved				Radial	Trunk- feeder	T-f improved		Radial	Trunk- feeder	T-f improved		Radial	Trunk- feeder	T-f improved
10101-A	Carmen	3520	478548	454953	464002	Central	65	9452.7795	7984191	6493342	6973781	0	1675956	1655369	1655369	0	555830.6	554845.8	555768.7
10101-B	Amón	1898	429381	417780	437507	Central	419	34299.4	6331685	5724178	6048364	5264.566	1592537	1655369	1655369	0	547685.7	542405.8	550572.3
10101-C	Parque Nacional	2468	429730	423301	431058	Central	74	32579.56	6442866	6027398	6534963	0	1673604	1655369	1655369	0	652372.9	653384.4	658830.6
10101-D	Otoya	718	411700	379057	412529	Central	196	228.08596	5765398	5099017	5304353	0	1673604	1654641	1655369	0	543637.9	537896.5	538530.8
10101-E	Calderón Guardia	1912	417668	407882	417526	Central	114	5041.9019	5536845	5371722	5939213	17099.94	1673604	1655369	1655369	34330.65	650326.1	644400.6	649253.2
10101-F	Aranjuez	1226	387792	351483	368820	Central	519	21333.074	4444578	4741098	5250438	4027.34	1589206	1567411	1567411	1839.602	536211.5	535620.5	535850.7
10101-G	La California Norte	1610	432605	392897	424246	Central	158	0	6227451	5854350	6181908	942.0155	1589935	1672876	1673604	0	653669.1	646489.3	650811.5
10101-H	Escalante Oeste	2292	406123	372503	380078	Central	355	10688.657	5040851	4937211	5445624	0	1589935	1570971	1571700	0	536902.4	536328.4	537938.6
10101-I	Empalme	897	355470	351786	362627	Central	252	0	4765629	4542986	4725568	10135.36	1585646	1553734	1566845	0	538235.1	538798.2	538403.9
10101-J	Escalante Este	1886	322090	315779	328082	Central	597	66.5297	4599890	3900503	4599332	0	1561053	1510907	1524018	0	525968.1	525217.7	535584.9
10102-A	Merced	2438	479800	464365	468088	Central	475	2374.2609	7120361	6876731	6980774	0	1576654	1576654	1576654	0	831834.4	829204.6	834567
10102-B	Paso de la Vaca	852	464727	445281	456147	Central	577	0	6150740	6271625	6699026	0	1576654	1576654	1576654	0	827911.3	825195.8	832063.8
10102-C	Bajos de la Unión	640	437000	413534	421053	Central	667	33330.599	5544483	5416063	5468678	0	1576654	1565271	1565271	0	545991.4	545065.5	549746
10102-D	Iglesias Flores	17	393713	374001	392844	Central	1312	3026.0778	4761811	4198525	4261122	0	1110116	948411.7	1174043	0	504485.8	491199.7	496691.9
10102-E	Coca Cola	845	448233	412042	431702	Central	278	0	6791418	6135473	6691930	0	1482618	870852.7	1482618	0	806938.3	798268.3	805308.5
10102-F	México Sur	2280	430714	389748	406063	Central	1339	851.90589	5857388	5482436	5673793	0	1473587	866847.5	1002718	0	804716.7	796352.1	797671.9
10102-G	México Norte	971	409031	365996	390878	Central	5909	7716.3361	5263565	4246275	4555248	0	1656239	873625.3	1102989	391.769	523153.7	496218.7	500714.7
10102-H	Torre Mercedes	736	446235	419926	457291	Central	350	0	5906301	5365159	5647264	0	1743914	708473.5	1276284	0	802840.4	800050.5	801829.3
10102-I	Pitahaya	2251	374771	365087	374166	Central	1723	785.55126	4935558	4735060	4880035	1480.598	721022.4	494225	554514.6	0	767890.3	762801.2	767727.9
10102-J	Claret	205	355226	330834	345932	Central	2182	13408.294	4480161	4053097	4576226	0	505889.4	250523.3	473569.4	0	762446.3	759601.2	760698.7
10102-K	Centro Colón	759	459730	435457	449952	Central	95	0	5880231	5394003	5653185	0	1622414	880734.7	1144418	0	803020.9	799526.5	802352.9
10102-L	Mántica	1440	400415	362155	397038	Central	550	5651.1804	4809304	4457341	4724780	0	789973.5	394828.8	870449.3	0	766042.9	751265.7	764792

Code	Name	Jobs	Jobs accessibility			Transit zone	Populati on	Recreati on square meters	Recreation accessibility			Universities square meters	Universities accessibility			Healthcare square meters	Healthcare accessibility		
			Radia l	Trunk- feeder	T-f improved				Radial	Trunk- feeder	T-f improved		Radial	Trunk- feeder	T-f improved		Radial	Trunk- feeder	T-f improved
10103-A	Hospital	398 9	4453 03	433807	438615	Central	355	13306.2 59	77884 74	7160343	7303601	0	15008 53	1482618	1482618	0	80700 1.5	803791.3	804145.4
10103-B	Dolorosa Oeste	446	4124 83	405266	413590	Central	175	1622.42 37	61475 80	6368593	6506129	0	14826 18	1136640	1482618	0	80393 7	801949.5	802991.9
10103-C	Ángeles	804	4141 22	418079	428377	Central	1955	0	65471 88	6377033	6881757	0	14294 17	942390.6	1420386	0	80160 1.9	799455.4	800406.7
10103-D	Pacífico Oeste	182 4	3903 35	384232	391242	Central	506	5739.28 91	63730 23	6224018	6304629	0	13074 75	688582.8	724626.1	0	80061 4.2	800614.6	801230.1
10103-E	Carit	688	3688 47	362934	370250	Central	642	599.013 2	57635 94	5406827	5753832	0	11642 27	536605.1	686230.9	21064.85	80038 8.4	800614.6	800882.2
10103-F	Cristo Rey Sur	986	3633 10	357313	362000	Central	3478	5092.83 61	50847 29	5138001	5172849	0	69335 8.1	483235.3	536605.1	0	53721 4.1	532956.2	532956.2
10103-G	Cristo Rey Norte	110 6	2897 47	273238	282309	Central	3962	45144.9 22	38973 80	3455663	3534170	0	37455 4	158238.7	160972.4	0	51413 4.1	512942.8	513239.7
10103-H	San Juan de Dios	447 2	4397 02	415241	430603	Central	116	5212.42 27	68241 19	6376628	6675809	0	14826 18	1127609	1482618	107079	80390 5.8	799922.4	802261.7
10103-I	Santa Lucía	616	4163 08	422310	429734	Central	459	774.043 69	66449 07	6502714	6602399	0	14294 17	774481.9	949517.8	0	80201 5.6	799681.1	800406.7
10103-J	Almendares	32	3930 43	381841	394251	Central	907	0	54401 74	5277480	5582346	0	82060 0.6	571486.3	624856.2	0	79695 7.7	795546.3	796925.6
10103-K	Cuba	141 7	3369 17	318090	326423	Central	2902	1629.15 19	45303 75	4076261	4262734	0	47826 8.9	376905.9	404385	0	79221 0.5	779855.6	781087.3
10103-L	Salubridad	36	3178 95	302295	313266	Central	3019	0	39704 83	3733271	4126835	0	39904 0.5	192636.8	376905.9	0	77222 3	778663.7	778975.2
10103-M	San Bosco Norte	127 4	4217 34	404025	421304	Central	284	0	58113 68	5419475	5721581	0	14346 13	698107.5	1040287	0	80162 1	796293	801314.1
10103-N	San Bosco Sur	107 9	4196 78	397398	418875	Central	1302	8186.01 81	58760 08	5839081	6062233	0	12524 78	639082.5	824751.5	0	79829 7.4	795523.5	797500.1
10103-O	Bolívar	115	3958 72	372600	401573	Central	1153	2821.27 29	54814 02	5531250	5905587	0	12984 44	571486.3	774481.9	6393.731	79661 3.5	794507.6	796130.2
10103-P	Barzuna	343 4	2729 09	275347	282559	Central	649	0	34915 30	3475359	3574488	0	14160 6.1	153865.8	156599.5	0	75540 2.2	756552.3	756936.7
10103-Q	Los Pinos	107	2964 99	276639	279238	Central	2487	1669.85 32	36606 00	3366796	3694572	0	37156 1.5	171958.4	174692.1	0	76120 0.4	761281.3	761281.3
10103-R	San Francisco	129 0	4290 14	403498	433107	Central	159	8902.55 98	58235 24	5337514	5594976	0	82787 3.5	644737.6	984426.8	0	80248 2.2	795552	802058
10103-S	Silos	175 9	3834 15	339262	350911	Central	331	728.503 91	51936 23	4609693	4750355	0	56117 5.5	462805	490284.1	0	77691 3.1	779241.4	781130.3
10103-T	Colón Este	275	3576 18	311858	330475	Central	691	1863.90 04	45549 65	4414616	4555047	0	37391 3.4	239764.9	430500	0	77361 2.9	757914.8	758673.8
10103-U	Corazón de Jesús	0	3074 72	275599	290303	Central	611	0	36127 17	3492614	3980159	0	17091 8.5	147094.9	150305.2	0	49173 7.4	490704.4	491673.5
10104-A	Catedral	307 9	4560 23	445227	466113	Central	130	19801.8 63	74538 01	6842105	7337920	0	16759 56	1675956	1675956	0	56297 9	562608	562608
10104-B	Dolorosa Este	165 9	4042 27	400567	427460	Central	457	0	68368 19	6321086	6630463	0	14126 02	1414954	1414954	0	53756 4.6	536807.3	537037.5
10104-C	Pacífico Este	188 5	3810 25	378040	404125	Central	668	0	62931 50	5790484	6169972	0	13411 66	1043366	1398375	0	80192 9	801648.4	801648.4
10104-D	San Cayetano	410	3594 17	342165	362035	Central	2183	13999.3 85	56432 63	5212766	5344001	0	12960 92	536605.1	686230.9	0	53437 3.4	534208.7	535076.5

Code	Name	Jobs	Jobs accessibility			Transit zone	Populati on	Recreati on square meters	Recreation accessibility			Universities square meters	Universities accessibility			Healthcare square meters	Healthcare accessibility		
			Radial	Trunk- feeder	T-f improved				Radial	Trunk- feeder	T-f improved		Radial	Trunk- feeder	T-f improved		Radial	Trunk- feeder	T-f improved
10104-E	Soledad	3050	404527	399789	430600	Central	267	2721.2373	6815078	6237495	6986184	0	1579569	1567694	1567694	0	537132.3	542645.3	542645.3
10104-F	González Víquez	1766	407959	388133	395548	Central	571	29679.363	6312098	5946670	6062908	0	1398375	1398375	1398375	0	811265.6	811094.2	811324.3
10104-G	La Cruz	698	373116	335668	354809	Central	1576	869.19467	5432223	5074024	5130977	0	1359401	967620.7	1358673	0	530637.8	266135.5	531331.9
10104-H	Guell	462	360641	358110	360065	Central	1283	0	5205760	5077076	5144064	0	1358673	1003664	1358673	0	532596.8	531971.2	531971.2
10104-I	Lomas de Ocloro	83	371487	354203	369405	Central	709	0	5390930	5073505	5326149	0	1358673	1003664	1358673	0	529231.1	527737	530670.2
10104-J	Naciones Unidad	788	294907	288975	295924	Central	731	14106.065	4819132	4790191	4828781	0	1307291	833375.5	835602.9	0	253956.3	262409.9	262814.1
10104-K	Bella Vista	150	429591	419094	441426	Central	22	7598.1867	6389774	6438952	6600788	0	1589935	1589935	1589935	0	549402.2	549619.4	554234
10104-L	La California Sur	920	428221	419305	429055	Central	94	334.03917	6171203	5901258	6265891	0	1589935	1589206	1589935	433.1784	653912.4	647054	654821.6
10104-M	González Lahmann	4432	410712	403079	420517	Central	713	268.00817	6791044	6398973	6628893	1112.198	1589935	1589206	1589935	0	547381.2	547763.9	560465.5
10104-N	Francisco Peralta	2057	370310	362783	376210	Central	390	4412.749	5515949	5453444	5638743	7810.815	1589206	1585646	1589206	0	539791.9	539951.8	540355.9
10104-O	Mil Flor	42	386122	389459	402047	Central	82	0	6208415	5844636	6330682	0	1589206	1589206	1589206	0	522796.8	547684.9	547952.5
10104-P	Tabacalera	298	315215	358922	386787	Central	33	0	5376052	5333215	5980041	0	1572753	1574980	1574980	0	276939.2	539805.6	544219.7
10104-Q	Dos Pinos	0	280014	287436	330488	Central	265	0	5152073	5234372	5531503	0	1444576	1476488	1478715	0	250447	253526.7	541485.1
10104-R	Luján	897	365619	352326	382640	Central	2735	4531.7961	6124281	5634186	5712227	0	1398375	1478715	1478715	7189.179	526236.5	526500.5	527371.7
10104-S	Vasconia	488	345398	325717	345194	Central	1086	3458.6293	5169263	4994666	5062283	0	1358673	1003664	1358673	7873.247	529582.5	265458.9	528696.3
10104-T	Carlos María Jiménez	219	334985	349182	351052	Central	380	0	5133021	4949683	5047424	0	1358673	1003664	1358673	0	267159.7	527576.4	528184.3
10105-A	Zapote	2516	237593	236696	244052	San Pedro - Curridabat - Tres Ríos	595	6642.5606	4132066	3821209	3968577	14993.44	1336686	1336686	1336686	1448.838	226133.5	238389.6	238619.8
10105-B	San Gerardo	178	214940	202250	204115	San Pedro - Curridabat - Tres Ríos	149	25727.338	3558330	3453031	3946974	0	1336686	1335205	1335205	0	225455	224073.8	224073.8
10105-C	Jardín	1062	221520	211592	227002	San Pedro - Curridabat - Tres Ríos	1588	2745.3088	3545812	3453927	3909685	0	1336686	1335205	1336686	0	225210.3	224184.4	224546.8
10105-D	La Gloria	677	180483	178520	183765	San Pedro - Curridabat - Tres Ríos	2043	28024.553	3308329	3394601	3503702	0	1335205	1335205	1335205	0	211790.3	212288.8	218963.8
10105-E	Moreno Cañas	415	190201	198594	217314	San Pedro - Curridabat - Tres Ríos	4859	1883.4742	3533969	3665918	3741249	0	902512.5	1335205	1336686	0	225560.8	226798.6	226798.6
10105-F	La Arboleda	0	228560	233402	263934	San Pedro - Curridabat - Tres Ríos	195	2931.186	3765980	4511451	4542332	0	1250147	1340246	1356958	0	226428.6	236941.9	238620.3
10105-G	Quesada Durán	516	192882	195633	208073	San Pedro - Curridabat - Tres Ríos	1130	1023.0689	3567363	3583760	3708394	0	1255618	989226.9	1336686	0	226589.3	223710.3	227387.7
10105-H	Las Luisas	0	211942	220568	248708	San Pedro - Curridabat - Tres Ríos	1260	11988.524	3530193	3747020	4410515	0	893481.5	906073.1	897042.1	0	226214.4	235864.7	238359.6
10105-I	Yoses Sur	1115	258385	252519	269901	Central	870	6088.4621	4579783	3888405	4527943	0	1441015	1441015	1441015	0	237533.5	235765.8	248039.5

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			Radia l	Trunk- feeder	T-f improved				Radial	Trunk- feeder	T-f improved		Radial	Trunk- feeder	T-f improved		Radial	Trunk- feeder	T-f improved
10105-J	Montealegre	206	2592 80	267143	275710	Central	1247	46326.4 72	42408 54	4686607	4881824	0	13599 47	1441015	1472927	0	23754 3.9	249011.1	249241.3
10105-K	Los Mangos	300	2734 59	278315	282808	Central	38	793.868 81	50209 15	4935419	5020476	9791.93	14445 76	1476488	1457687	0	24804 3.6	248945.6	249604.3
10105-L	Cerrito	62	2954 46	283474	289903	Central	1117	0	50066 78	5132877	5239609	0	13954 20	1476488	1476488	0	24189 3	252563.2	254245.2
10105-M	Córdoba	460	2012 97	203454	233350	Central	1706	9745.68 7	34971 12	3640580	4416129	0	12373 83	974549.3	1327655	0	22588 3.6	226091.6	236967.3
10105-N	Ujarrás	129	2441 82	257630	295747	Central	1028	4692.70 25	38655 23	4591519	4679042	0	12576 56	1010022	1078935	0	24017 6.3	239788	240192.2
10105-O	Trébol	310	2817 15	281038	286942	Central	513	6344.63 83	45810 92	4633648	4690911	0	12884 91	701510.2	833375.5	0	24889 8.7	247374.3	248421.9
10105-P	San Dimas	416	3224 34	316461	320851	Central	96	782.627 38	47772 10	4881892	4902048	0	13226 30	835602.9	835602.9	0	25903 7.2	262570.5	262974.6
10105-Q	Calderón Muñoz	93	3182 44	295203	302729	Central	1142	2004.62 42	49773 59	4837919	4892746	0	13204 02	958266.2	960493.5	0	26409 4.9	262831.1	263235.3
10106-A	San Francisco	737	2331 26	241993	283969	San Francisco	2307	4951.62 85	38182 70	4489511	4571953	0	12501 47	994268.1	1035765	0	22738 2.2	239788	240003.4
10106-B	Fátima	219	2012 08	191852	209913	San Francisco	399	1115.35 64	34857 10	3520846	3572803	0	76859 0.9	973068.7	974549.3	0	22467 6.8	224837.4	224837.4
10106-C	Zurquí	289	2183 63	228921	244531	San Francisco	282	2627.88 41	36707 98	3762818	4549667	0	97454 9.3	983580.3	978109.9	0	22582 1.4	226877.5	241039.3
10106-D	Ahogados	99	2243 95	232139	258363	San Francisco	253	523.221 23	37827 32	3890156	3962726	0	13295 58	1336686	1336686	0	22701 4	231989.9	231989.9
10106-E	La Cabaña	0	1686 24	164439	178722	San Francisco	602	1456.40 41	32839 63	3303182	3328665	0	89200 0.9	969063.5	969063.5	0	21731 9.4	211346.9	217956
10106-F	La Pacífica	228	1717 69	178244	205582	San Francisco	3600	51931.2 84	33275 25	3431063	3478551	0	89200 0.9	969063.5	969063.5	0	21834 7.7	223230.9	228520.6
10106-G	Lomas de San Francisco	0	1469 35	156603	182238	San Francisco	624	4569.03 05	29994 05	3231914	3265070	0	42493 1	424931	574112.2	0	21108 9.7	213856.1	220249.8
10106-H	Saucitos	3	2022 27	224835	242260	San Francisco	369	665.041 01	33909 81	3559590	3652765	0	57411 2.2	575592.8	575592.8	0	23568 7.4	235669.5	235669.5
10106-I	Bosque	300	2307 55	260563	273413	San Francisco	2890	44277.8 06	35497 35	3802864	4539892	0	83234 8.8	849214.1	990816.9	0	23633 8	247129.2	246721.8
10106-J	Lincoln	226	2144 00	232558	261041	San Francisco	1706	0	36403 24	3740809	4448786	0	89348 1.5	849214.1	974104.7	743.4455	22556 0.8	238199.1	246043.2
10106-K	Maalot	481	2029 05	192627	194148	San Francisco	1338	2851.22 94	32864 38	3251269	3300816	0	41173 7.3	336372.7	356886.8	384.3941	23649 5.3	234257	236163.3
10106-L	Camelias Este	187	2887 90	274190	287061	Desamparados	230	0	47194 17	4509904	4578898	0	13072 91	682709.8	701510.2	0	25198 0.1	250903	250903
10106-M	Sauces Oeste	264	2445 15	246047	256416	San Francisco	1819	6706.27 78	36514 81	3664679	4473832	0	76517 6.7	490660.4	490660.4	0	23811 2	245769.9	247521.6
10106-N	Faro	210	2907 88	292855	302480	San Francisco	684	7579.09 07	46840 42	4647317	4734227	0	12794 60	914443.3	914443.3	0	24889 8.7	247213.7	259019.4
10106-O	I Griega	397	2960 61	282196	292463	Desamparados	1140	713.934 45	47371 38	4599785	4631119	0	13204 02	833375.5	833375.5	0	25093 2.4	248689.3	249737
10106-P	Méndez	101	2990 79	298794	307095	San Francisco	596	819.574 19	48448 77	4755371	4927575	0	12884 91	833375.5	835602.9	0	26020 3.3	257352.3	263422
10106-Q	Hispano	226	2584 99	262665	293090	San Francisco	1475	11637.0 6	45335 27	4537885	4598362	0	12668 60	914443.3	910438.2	0	23958 5	245036.6	245036.6

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			Radia l	Trunk- feeder	T-f improved				Radial	Trunk- feeder	T-f improved		Radial	Trunk- feeder	T-f improved		Radial	Trunk- feeder	T-f improved
10106-R	Moteles Oeste	137 1	2249 67	231724	246420	San Francisco	889	5426.63 95	37539 33	3812730	4663865	3732.324	13366 86	1336686	1336686	0	22709 8.5	232008.6	242865.6
10106-S	Sauces Este	336	2488 50	266710	278793	San Francisco	898	9517.85 61	37344 51	4481200	4528086	0	12501 47	768146.3	784858.5	0	23720 5.9	247213.7	247429.1
10107-A	Uruca	119 31	3775 18	334712	348822	Uruca - Heredia Sur	1633	1664.27 59	40931 51	3724597	3840875	0	87347 4.1	853103.9	927080.5	0	49441 9.7	492997.4	493401.6
10107-B	Bajo Torres	62	4114 84	384280	397282	Uruca - Heredia Sur	755	0	48800 86	4202917	4345139	0	11186 99	1174043	1174043	0	52056 8.1	494514.2	498584.4
10107-C	Carranza	332	3699 51	321135	336550	Uruca - Heredia Sur	729	813.153 16	37847 98	3350974	3724134	0	87347 4.1	813789.5	832589.9	0	49392 3.9	488678.4	492566.7
10107-D	Marimil	516	3105 43	265706	304325	Uruca - Heredia Sur	97	1158.70 56	30066 17	2830326	3031951	0	61489 7.6	337197	586196.4	0	47752 9.7	476490.9	477529.7
10107-E	Monserrat	0	1929 46	197891	223562	Uruca - Heredia Sur	312	4005.16 79	14669 86	1575748	1674678	0	14112 6.8	254109.1	504295.5	0	44122 4	441231.1	445342.7
10107-F	Robledal	808	2184 74	210897	235806	Uruca - Heredia Sur	1038	15076.6 85	16004 94	1652629	1751238	0	38458 2.3	255221.3	534841.9	0	44534 2.7	451369.7	456520.1
10107-G	Saturno	524	3637 72	349689	373241	Uruca - Heredia Sur	317	2466.52 03	35628 76	3338161	3425114	2227.358	65956 1.7	660887.9	688874.1	0	75060 7.8	759888	759888
10107-H	Pozuelo	960 7	3913 48	343380	366923	Uruca - Heredia Sur	714	14191.0 56	32215 79	3038253	3260331	0	68887 4.1	692084.5	692084.5	0	49171 4.6	490413.2	490413.2
10107-I	La Peregrina	715	2430 29	207411	264209	Uruca - Heredia Sur	4055	32275.8 07	22822 68	2279133	2417493	0	51466 1.4	290152.4	545207.8	0	44638 1.5	445342.7	457076.1
10107-J	Las Ánimas	538 8	2920 10	299259	308953	Uruca - Heredia Sur	760	1790.16 21	25187 79	2571391	2614611	0	54657 3	566984.1	577119.5	0	44895 1.9	468798.4	469294.2
10107-K	Migración	328 6	3874 26	328211	385213	Uruca - Heredia Sur	106	5785.10 61	34695 74	3071625	3189281	0	63849 5.8	628360.4	651096	0	84223 5.8	568805.4	594006.4
10107-L	Corazón de Jesús	813	2719 18	286942	292303	Uruca - Heredia Sur	5	0	24026 82	2478251	2518217	0	52472 1.3	529860.8	529860.8	0	44612 3.1	458659.8	459155.6
10107-M	Vuelta del Virilla	961	3507 81	345163	353483	Uruca - Heredia Sur	618	1856.74 69	28152 06	2762265	2862174	0	68569 3.8	603837.4	611648.2	0	56585 8.4	564899.1	565090.3
10107-N	General Cañas	203 4	1895 88	125102	160450	Uruca - Heredia Sur	1289	0	19234 14	1017706	2003594	0	36210 4.5	90335.35	119057.5	0	38410 4.9	378732.3	387184.8
10107-O	Rositer Carballo	260	2186 67	74345	145124	Uruca - Heredia Sur	1401	4511.73 72	19081 21	324540.8	1269242	0	31596 6.5	2955.686	104561.7	354.0528	37977 1.1	263591.4	386823.7
10107-P	Jardines de Autopista	123 8	3246 29	321138	328854	Uruca - Heredia Sur	1644	0	34254 08	3038041	3195417	0	54984 0	537671.7	557598.9	0	74858 8.2	745074	749084
10107-Q	Árboles	0	2580 13	227409	254637	Uruca - Heredia Sur	1209	11197.6 04	25733 05	2446807	2523732	0	47848 2.2	270682.2	478482.2	0	71467 1.2	653642.1	714671.2
10107-R	Hospital México	176 21	3886 53	339636	354687	Uruca - Heredia Sur	254	2918.03 33	37294 29	3186615	3553521	0	61489 7.6	586911.4	617249.5	263237.4	75286 4.2	759445	761701.4
10107-S	Cristal	398	2472 10	210154	246160	Uruca - Heredia Sur	2661	48513.1 15	23619 43	2149793	2289842	0	47848 2.2	235751.1	487235.1	0	44494 6	404492.1	443417.6
10107-T	Florentino Castro	118 5	3162 28	273414	303249	Uruca - Heredia Sur	0	12484.4 28	31210 93	2499466	2612971	0	53767 1.7	308013.2	537671.7	0	46829 7.4	455215.5	476170.6
10107-U	Finca de la Caja	202 8	1467 04	133619	140090	Uruca - Heredia Sur	69	388488. 52	17870 22	1670848	1716374	0	90335. 35	90335.35	90335.35	0	38306 6.1	378429.8	378429.8
10107-V	La Carpio	59	1214 56	103733	112763	Uruca - Heredia Sur	25813	0	86790 9.3	828816.2	870099.9	0	90335. 35	4436.284	90335.35	343.0015	37805 9.4	377705.3	378059.4
10107-W	Electriona	121 2	2755 9	26321	27559	Uruca - Heredia Sur	427	11715.7 4	47237 1.5	472371.5	472371.5	0	2227.3 58	2227.358	2227.358	0	26358 0.4	263580.4	263580.4

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10108-A	La Sabana	558	2631 12	252738	262391	Central	4	612396. 64	29533 81	2859033	3017110	0	96356. 25	93979.85	132101.4	0	74347 5.4	740138.8	740628.4
10108-B	Nissan	171 1	3229 20	277070	323454	Central	253	8092.45 46	42029 10	3551631	4321905	0	45251 9.5	234712.7	437526.1	0	74881 7	742841.8	746632.2
10108-C	La Luisa	0	2854 96	258351	275434	Central	0	0	34593 37	3216769	3421046	0	19648 1.7	180286	232226.8	0	74191 1	738581.1	741264.4
10108-D	Américas	144 3	3172 30	265542	305807	Central	442	0	41536 74	3484715	4154394	0	25052 3.3	218000.5	437526.1	0	74702 5.1	740242.3	745171.1
10108-E	Sabana Norte	828	2742 02	234669	269496	Central	655	800.722 35	35146 91	3157030	3393976	0	13210 1.4	84187.92	135311.8	0	74454 0.2	739634	742884.9
10108-F	Nunciatura Norte	561	2586 12	226102	253773	Pavas	372	0	33225 59	2903963	3325121	0	96356. 25	81835.97	132101.4	0	74132 5.5	731874.6	741585.9
10108-G	Nunciatura Sur	176 4	2658 87	243358	262175	Pavas	681	13771.0 82	34621 63	3211825	3343138	0	13210 1.4	84187.92	135311.8	0	74262 6.8	740745.7	743488.3
10108-H	Rancho Luna	595	2697 30	248182	272543	Pavas	463	2009.86 68	31549 73	2899969	3151108	0	13210 1.4	93979.85	135311.8	0	74601 9.6	740402.7	742884.9
10108-I	Balcón Verde	314	2408 34	215025	262728	Escazú - Santa Ana	667	3485.79 65	30073 00	2911641	3194141	18800.39	84187. 92	89952.51	132101.4	0	74407 7.2	735790.2	738585.7
10108-J	Holanda	75	2460 18	215898	226056	Escazú - Santa Ana	421	3808.22 65	29081 70	2707304	2839875	0	84187. 92	53829.43	89952.51	0	74312 1.3	700826.3	735156.9
10108-K	Anonos	107	2567 72	233900	261621	Escazú - Santa Ana	910	1629.31 91	30938 44	2874313	3128212	0	84187. 92	80160.58	100087.9	0	74425 0.3	745737.3	747038.7
10108-L	Niza	188 1	2462 72	216231	226135	Escazú - Santa Ana	293	0	29246 00	2724694	2840836	0	84187. 92	53829.43	89952.51	0	74312 1.3	700826.3	735156.9
10108-M	Loma Linda	472	2021 49	170271	201295	Escazú - Santa Ana	151	0	25408 81	2166504	2583815	0	72349. 76	37460.09	63621.36	0	71942 6.5	692285	699634.7
10108-N	Roma	58	2391 94	234156	253503	Escazú - Santa Ana	328	0	29915 73	2892237	3080708	0	96356. 25	89952.51	104115.2	0	74407 7.2	735790.2	737629.8
10108-O	La Salle	119 6	2427 05	222842	262002	Central	453	0	30741 44	3021777	3529164	13111.22	96356. 25	104115.2	132101.4	0	74412 5.1	738778.1	744902.1
10108-P	Sabana Sur	391	2562 56	236653	269119	Central	1655	11963.5 7	31904 24	3011349	3580043	0	13210 1.4	89952.51	132101.4	0	74412 5.1	736938.5	743601.5
10108-Q	Morenos	150 7	2930 96	272274	299339	Central	2181	42880.9 98	34346 66	3588453	3820382	0	13531 1.8	150655.5	153865.8	0	75650 6.5	757171.3	757914.8
10108-R	Del Pino	0	2966 64	274174	297405	Central	0	1607.55 38	34488 90	3599463	3753973	0	15202 4	147094.9	150305.2	0	75717 4.5	757171.3	757914.8
10108-S	Colón Oeste	953	3336 89	302380	312413	Central	1190	24643.0 27	39285 97	3799270	3898937	0	18591 1.9	150305.2	153038.9	0	76009 5.4	757914.8	758299.1
10108-T	Tovar	126	3434 06	301281	324244	Central	0	626.296 33	45467 33	3861193	4381409	0	37018 1.1	239764.9	433492.6	0	77201 3	757198.8	775681.6
10108-U	Estadio	159	3004 21	268540	285036	Central	0	0	37066 40	3487569	3978165	0	23792 3.1	190014.3	223944.5	0	74732 2.7	740888.9	743145.3
10109-A	Pavas	289 1	1337 18	125540	136881	Pavas	7783	14216.3 94	19201 87	1529647	1896877	0	36347. 89	36347.89	36347.89	959.3428	65237 1.9	648361.9	652805.1
10109-AA	Geroma Norte	34	1199 98	103723	111588	Pavas	1951	13960.1 7	15210 75	1425698	1481449	0	36347. 89	34867.3	36347.89	0	64772 0.9	640935.4	640935.4
10109-AB	Roma	0	1275 07	97432	108174	Pavas	2018	26484.2 82	15408 77	1416705	1479092	0	36347. 89	36347.89	36347.89	0	64772 0.9	647329.1	647329.1
10109-AC	Psiquiátrico	114 3	1127 99	104711	119992	Pavas	688	0	14899 09	1421188	1524927	0	36347. 89	36347.89	36347.89	266241.2	64732 9.1	647329.1	648361.9

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			Radial	Trunk- feeder	T-f improved				Radial	Trunk- feeder	T-f improved		Radial	Trunk- feeder	T-f improved		Radial	Trunk- feeder	T-f improved
10109-AD	Ernesto Rohrmoser	808	1936 61	176168	202629	Pavas	1464	12035.0 16	22942 42	2103571	2286613	0	69055. 8	41612.46	60708.69	0	70919 5	673436.8	684151.4
10109-AE	Lomas del Río Este	123	7819 1	77447	78225	Pavas	3439	0	13831 19	1379336	1382493	0	34120. 54	34120.54	34120.54	0	37769 8	377698	377698
10109-AF	Laureles	157	7819 1	77447	78225	Pavas	7851	18735.4 22	13831 19	1379336	1382493	0	34120. 54	34120.54	34120.54	0	37769 8	377698	377698
10109-B	Santa Bárbara	224 12	2087 35	198252	219463	Pavas	380	16170.5 54	25685 84	2458170	2597719	0	54307. 81	38699.84	53829.43	0	67605 5.9	684662.6	684572.3
10109-C	Alfa	38	2556 44	232595	254242	Pavas	134	0	32972 11	2934622	3325710	0	96356. 25	81835.97	132101.4	0	74132 5.5	740095.7	741585.9
10109-D	Rohrmoser Sur	108 5	2482 02	210849	232685	Pavas	741	24251.0 41	30697 42	2486946	2909267	0	16773 5	122247	137376.6	0	72368 3.3	653345.8	675197.9
10109-E	Asunción	847	2492 38	236374	248945	Pavas	1537	32032.2 61	30129 23	2920907	3017657	0	16370 7.7	137854.9	163707.7	0	71131 5	675191.7	719810
10109-F	Favorita Sur	671	1962 72	177483	190912	Pavas	1632	30400.4 05	25952 65	2470469	2526860	0	50843. 66	36347.89	37460.09	0	67401 0.4	652371.9	652805.1
10109-G	Geroma Sur	178 0	1880 45	159459	166638	Pavas	3073	61942.6 46	25437 13	2057508	2306077	0	50843. 66	36347.89	36347.89	0	67343 6.8	648361.9	648361.9
10109-H	Triángulo	254	1718 63	144176	152632	Pavas	755	2672.04 15	20523 33	1653404	2021046	0	36347. 89	36347.89	36347.89	0	65271 9.8	648361.9	652805.1
10109-I	Favorita Norte	97	1281 47	105892	125898	Pavas	1604	127083. 83	15742 08	1448280	1524084	0	36347. 89	36347.89	36347.89	0	64772 0.9	647329.1	647970.1
10109-J	Hispania	6	1088 08	82732	99301	Pavas	1096	2152.20 95	14458 87	1264905	1384216	0	36347. 89	34867.3	36347.89	0	64772 0.9	533452.2	640935.4
10109-K	Santa Catalina	153	1475 26	117507	134223	Pavas	1998	34806.1 37	18853 34	1500962	1886270	0	36347. 89	36347.89	36347.89	0	64836 1.9	648361.9	652371.9
10109-L	Aeropuerto	343	9763 4	77122	85755	Pavas	453	1292.84 23	13929 92	1192121	1320280	0	36347. 89	34867.3	34867.3	0	64053 1.2	533452.2	533856.4
10109-M	Llanos del Sol	530	1079 97	104711	111464	Pavas	810	5318.14 57	14381 70	1421188	1481466	0	36347. 89	36347.89	36347.89	0	64732 9.1	647329.1	647329.1
10109-N	Residencial del Oeste	0	1220 18	100897	104364	Pavas	2886	12877.0 42	15263 95	1416347	1459643	0	36347. 89	34120.54	34120.54	0	64836 1.9	647329.1	647329.1
10109-O	María Reina	17	1496 33	127182	139773	Pavas	703	222.707 57	19474 94	1531846	1928061	0	36347. 89	36347.89	36347.89	0	65237 1.9	648361.9	652371.9
10109-P	Villa Esperanza	58	1265 49	77790	97227	Pavas	6948	8277.56 64	17618 05	1380629	1392099	0	36347. 89	34120.54	36347.89	0	64836 1.9	377698	647329.1
10109-Q	La Libertad	16	1118 20	97432	108178	Pavas	4040	22697.6 09	14916 24	1405507	1475681	0	36347. 89	36347.89	36347.89	0	64797 0.1	647329.1	647329.1
10109-R	Pueblo Nuevo	14	1292 70	106518	122018	Pavas	1050	0	15432 56	1428904	1526395	0	36347. 89	36347.89	36347.89	0	64836 1.9	647720.9	648361.9
10109-S	Demasa	787 4	1292 70	113267	127643	Pavas	1165	14165.1 39	15432 56	1499340	1537471	0	36347. 89	36347.89	36347.89	3014.284	64836 1.9	648361.9	648361.9
10109-T	Santa Fe	0	1020 68	96543	100897	Pavas	557	12664.7 25	14166 03	1389632	1416347	0	36347. 89	34120.54	34120.54	0	64732 9.1	647329.1	647329.1
10109-U	Finca San Juan	32	1012 16	78065	96703	Pavas	6328	6589.57 85	14166 03	1382493	1389632	0	36347. 89	34120.54	34120.54	0	64732 9.1	377698	647329.1
10109-V	Metrópolis	0	6452 4	59920	64524	Pavas	9042	8706.30 7	13386 14	1281946	1338614	0	32639. 94	32639.94	32639.94	0	27061 9	270214.8	270619
10109-W	Rincón Grande	8	7683 7	66957	73666	Pavas	936	0	64937 9.8	591816.5	646854.4	0	2955.6 86	2955.686	2955.686	0	37101 3.4	370659.4	371013.4

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			Radia l	Trunk- feeder	T-f improved				Radial	Trunk- feeder	T-f improved		Radial	Trunk- feeder	T-f improved		Radial	Trunk- feeder	T-f improved
10109-X	Lomas del Río Oeste	120	6452 4	59920	64524	Pavas	3774	13214.1 08	13386 14	1281946	1338614	0	32639. 94	32639.94	32639.94	0	27061 9	270214.8	270619
10109-Y	Bribri	80	6150 1	59914	61427	Pavas	6440	18780.3 64	12832 39	1279794	1324827	0	32639. 94	32639.94	32639.94	0	27021 4.8	270214.8	270214.8
10109-Z	Rohrmoser Norte	695	2601 85	220301	237569	Pavas	357	68979.0 31	31778 54	2620243	2740721	728.3281	18196 1.4	141737.9	160834.1	0	74126 4.4	679401	679834.2
10110-A	Hatillo Centro	449 5	2453 25	230118	238641	Hatillo - Alajuelita	2342	26674.7 52	29765 12	2935589	3170789	0	13652 0.5	147575.2	148303.5	9707.901	49282 6.3	492399.2	494655.7
10110-B	Tiribi	86	1619 60	151682	161509	Hatillo - Alajuelita	382	0	24787 21	2538573	2625625	0	78413. 56	88205.49	90432.84	0	21655 9.6	215287.7	216063.3
10110-C	15 de setiembre	105 1	1243 28	149528	157733	Hatillo - Alajuelita	6065	35527.1 72	19591 00	2655568	2704162	0	81406. 08	81406.08	91198.01	0	23425 0.7	235378.5	235378.5
10110-D	Belgrano	63	1811 02	158497	177382	Hatillo - Alajuelita	547	4220.60 01	26644 96	2509530	2679720	0	12056 2.5	90432.84	100568.2	0	22322 2.6	215691.8	215691.8
10110-E	25 de julio	858	1609 48	146644	151104	Hatillo - Alajuelita	4846	4911.10 74	25081 90	2473308	2582440	0	78413. 56	88205.49	88205.49	0	21664 5.1	215287.7	215659.2
10110-F	Sagrada Familia	184	2038 78	201554	205516	Hatillo - Alajuelita	5975	6111.44 21	29553 93	2941583	3010843	0	14534 7.8	149080.2	151307.5	0	22805 5.8	224527.4	225303.1
10110-G	Hatillo 1	166	1812 79	158246	190170	Hatillo - Alajuelita	2894	14763.5 63	26485 50	2549343	2575504	0	12278 9.8	88205.49	90432.84	0	22235 4.9	215691.8	478929.2
10110-H	Hatillo 2	121 1	1542 54	152305	160989	Hatillo - Alajuelita	4961	112617. 75	25530 35	2602449	2670590	0	71331. 07	53289.11	71833.87	4010.043	21383 7.9	182002.2	182961.6
10110-I	Hatillo 3	124	1092 52	99181	108623	Hatillo - Alajuelita	3890	13201.8 77	20538 91	1969211	2004019	0	52560. 79	38065.02	45875.83	0	18136 1.2	165461.4	173487.9
10110-J	Hatillo 4	219	1061 65	106432	116020	Hatillo - Alajuelita	4147	13559.9 62	14496 20	2299094	2381195	0	53502. 8	45875.83	61874.34	0	17308 3.8	180957	180957
10110-K	Hatillo 5	8	8516 9	80971	87810	Hatillo - Alajuelita	4997	15574.8 41	12327 79	1256062	1267477	0	36952. 82	18152.43	38065.02	0	16257 4.7	165069.7	165069.7
10110-L	Hatillo 6	37	7711 2	67486	73920	Hatillo - Alajuelita	6978	41308.1 85	11557 77	1150692	1191877	0	33392. 21	16671.83	18152.43	0	16152 7.1	164022.1	165069.7
10110-M	Hatillo 7	78	7744 2	59628	72905	Hatillo - Alajuelita	2831	12862.9 29	13514 45	1475163	1517214	0	33392. 21	35472.22	35472.22	0	16054 1.4	54014.14	161093.1
10110-N	Hatillo 8	0	1125 78	113543	117814	Hatillo - Alajuelita	9364	20454.6 87	14524 85	1622264	1738788	0	33392. 21	36952.82	37681.15	0	16188 9	164426.2	164426.2
10111-A	San Sebastián	205 9	2880 51	268452	273926	San Sebastián - Paso Ancho	2053	1136.90 73	35472 16	3960325	4008914	0	37382 5.7	373825.7	373825.7	0	52757 3.5	257512.2	263586
10111-AA	Camelias Oeste	105	2915 90	279708	289417	Desamparados	375	0	47390 26	4604202	4601967	0	13204 02	833375.5	833375.5	0	25198 0.1	249737	250903
10111-AB	Cascajal	178	2706 83	258197	259646	Desamparados	1526	3661.17 66	38673 79	4494246	4576318	0	12319 12	618045.9	636280.9	0	25003 5.3	252879.2	253747
10111-AC	Parque de la Paz	601	2612 92	255112	268605	Desamparados	189	247092. 22	38645 64	4429218	4547215	0	12501 47	472425.4	507372.6	0	24886 9.2	251403.5	252271.4
10111-AD	Carmen Oeste	668	3168 79	288268	316470	San Sebastián - Paso Ancho	1289	6257.75 54	42705 97	4067163	4288811	0	47591 7	373825.7	421818.8	0	53041 9.6	523719.3	530192.8
10111-AE	San Gerardo	83	2377 49	222006	246493	San Sebastián - Paso Ancho	2160	1658.71 15	37767 03	3655946	3783278	0	37159 8.3	158016.7	358998.1	0	25559 2.7	249982.4	250035.9
10111-B	Bajo Cañada	0	1736 42	172421	175311	Hatillo - Alajuelita	310	0	29209 99	2865803	2916445	0	15528 3.1	149080.2	152072.7	0	24503 1	223811.5	244163.2
10111-C	Cañada Sur	491	2948 48	267586	294259	Hatillo - Alajuelita	1637	44706.7 75	35989 77	3984383	4085348	0	40130 4.7	373825.7	373825.7	0	52757 3.5	258800.3	522037.6

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10111-D	Magnolias	0	2452 51	234963	238932	Hatillo - Alajuelita	1150	4015.55 43	32596 83	3139892	3237741	0	37382 5.7	171995.3	174728.9	0	24723 9.8	245729.7	246597.4
10111-E	Colonia Kennedy	629	1876 88	177466	186279	Hatillo - Alajuelita	3059	32379.1 78	29970 20	2950833	3068814	0	15528 3.1	152072.7	155283.1	1301.344	25158 1	246222.8	246222.8
10111-F	Musmani	81	1903 21	186003	194085	San Sebastián - Paso Ancho	876	0	29902 40	3093105	3174270	0	12337 1.4	152072.7	155283.1	0	25189 2.5	246938.7	252826.6
10111-G	Presidentes	152	1791 20	175278	180158	San Sebastián - Paso Ancho	1311	11275.1 06	22923 67	2343200	3025691	0	12016 1.1	120161.1	133272.3	955.8388	25152 7.3	249768.6	249986.8
10111-H	López Mateo	363	1618 14	144190	163079	San Sebastián - Paso Ancho	6614	12002.3 84	22036 03	2240365	2334909	0	11642 8.7	78307.18	92174.86	0	24916 0.2	244098.9	249768.6
10111-I	Mojados	0	1250 27	118804	127992	San Sebastián - Paso Ancho	1581	13424.1 74	18266 03	1867419	1943380	0	49494. 47	48013.87	59286.4	0	23969 4.1	233143	234270.8
10111-J	San Martín	31	1706 73	173374	197510	San Sebastián - Paso Ancho	2027	3001.09 46	22895 45	2290581	2925282	0	12016 1.1	120161.1	120161.1	0	25091 8.9	249052.7	249270.9
10111-K	Bilbao	42	1815 37	185999	213129	San Sebastián - Paso Ancho	1173	3794.68 22	29445 46	3002142	3088390	0	14217 1.8	152072.7	155283.1	0	25152 7.3	251309.1	252110.7
10111-L	Santa Rosa	72	1844 05	185262	192153	San Sebastián - Paso Ancho	1998	239.562 09	30979 50	3060174	3124959	0	12337 1.4	152072.7	155283.1	0	25189 2.5	246222.8	251892.5
10111-M	Bengala	24	1770 98	170114	179776	San Sebastián - Paso Ancho	3106	3837.56 42	23521 34	2821060	3059992	0	12016 1.1	120161.1	123371.4	0	25413 2.9	245105.3	248515.2
10111-N	Paso Ancho	213	2432 26	193099	251769	San Sebastián - Paso Ancho	5497	21615.0 84	37021 42	3599000	3657997	0	17472 8.9	155283.1	158016.7	0	25530 8.8	249345	250035.9
10111-O	Domingo Sabio	6	2309 02	214583	241236	San Sebastián - Paso Ancho	0	0	32962 82	3412746	3723133	0	37159 8.3	158016.7	174728.9	0	24846 3.2	247703.9	248475.6
10111-P	Zorobarú	96	2918 29	271657	296294	San Sebastián - Paso Ancho	1419	11382.8 75	33664 20	4021894	4099059	0	40130 4.7	373825.7	373825.7	0	52713 9.6	258800.3	522037.6
10111-Q	Hogar Propio	0	3133 78	311924	317501	San Sebastián - Paso Ancho	845	2087.41 3	43030 69	4366043	4429527	0	47591 7	373825.7	421818.8	0	53193 6.2	527164.8	528846.9
10111-R	Luna Park	466	3199 41	304512	323574	San Sebastián - Paso Ancho	1664	264.231 07	43513 12	4110231	4330123	0	47591 7	401304.7	421818.8	0	53041 9.6	526297.1	530355.7
10111-S	Mongito	50	3263 06	313862	327320	San Sebastián - Paso Ancho	1310	2255.94 4	48538 54	4692138	4917650	0	62153 7.5	421818.8	421818.8	0	53175 5.6	531113.5	532015
10111-T	Colombari	40	3119 74	282474	320652	San Sebastián - Paso Ancho	1015	2900.33 74	47907 52	4641794	4790628	0	68862 4.6	482506.9	482506.9	0	26367 4.7	263663.9	532303.2
10111-U	Carmen Este	656	2815 41	260052	273919	San Sebastián - Paso Ancho	2426	67341.8 83	45400 92	4481440	4595086	0	61858 1.8	406991.2	421818.8	0	24397 7.4	251969.7	252641.4
10111-V	Guacamaya	147	1929 87	190798	214920	San Sebastián - Paso Ancho	253	0	30971 24	3944298	3982171	0	31037 4.3	158016.7	158016.7	0	23981 1.8	249593.8	249593.8
10111-W	Monte Azul	196	2361 33	224153	268912	San Sebastián - Paso Ancho	1441	8016.09 57	38867 11	4055931	4329765	0	35899 8.1	158016.7	358998.1	0	24094 3.2	249593.8	249721.7
10111-X	Seminario	35	1950 91	188621	226629	San Sebastián - Paso Ancho	173	0	29506 52	3458390	3548924	0	15801 6.7	155283.1	158016.7	0	23968 3.9	248298.8	248298.8
10111-Y	Cerro Azul	0	2321 71	202096	210874	Desamparados	724	2395.38 12	34887 70	3433822	3531154	0	55735 7.8	358367.4	358367.4	0	24762 5.4	249185.7	250219.7
10111-Z	Jazmín	406	2640 24	241834	247080	Desamparados	869	0	37680 25	3610948	4421858	0	10960 42	472425.4	472425.4	0	25060 3.1	247521.6	252579.2
10201-A	Escazú	194 7	2046 58	192754	218333	Escazú - Santa Ana	3228	7499.77 01	25315 10	2520385	2657700	0	54307. 81	48564.87	48564.87	641.0464	42065 1.6	165554.1	428791.5
10201-B	Guapinol	412	1564 92	164986	169514	Escazú - Santa Ana	1489	0	21768 93	2036988	2236459	0	36472. 48	36856.35	37584.68	0	15412 3.3	159821.2	164264.4

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10201-C	Faroles	309	1644 88	173395	178137	Escazú - Santa Ana	1940	0	22596 83	2171223	2376639	0	36472. 48	36856.35	37584.68	0	15396 6.7	150401.9	155010.1
10201-D	Itabas	360	1517 97	164586	182655	Escazú - Santa Ana	2504	0	22890 68	2202237	2451318	0	36472. 48	36856.35	37584.68	0	14354 2.9	150191.5	154634.7
10201-E	Carrizal	503	1180 91	121468	131393	Escazú - Santa Ana	1681	8850.41 41	16889 79	1752351	1815318	0	35744. 15	35744.15	35744.15	347.8319	11711 6.9	117622.4	118067.6
10201-F	Alto Carrizal	0	6304 1	33509	85424	Escazú - Santa Ana	242	0	53317 6.4	574386.4	936102.4	0	31911. 61	0	34263.55	0	9624.8 74	9624.874	9624.874
10201-G	Bebedero Norte	0	3451	4947	15248	Escazú - Santa Ana	122	0	69310. 51	80377.35	363965.8	0	0	0	0	0	866.78 92	1214.621	1618.762
10201-H	Jaboncillo	0	8576 3	82379	92868	Escazú - Santa Ana	1381	0	88630 5	947668.4	1005195	0	34263. 55	21152.33	34263.55	0	9624.8 74	10037.92	10037.92
10202-A	San Antonio	510	1276 17	99817	124517	Escazú - Santa Ana	3255	13349.7 7	19542 94	1190149	2054873	0	35744. 15	35744.15	35744.15	225.7428	11752 9.6	117137.8	117550.9
10202-B	La Avellana	272	1258 27	124836	131857	Escazú - Santa Ana	2961	2216.42 81	20531 51	1938059	2067204	0	35744. 15	35744.15	35744.15	0	11824 5.5	117853.8	117853.8
10202-C	Santa Eduviges	471	1201 82	85421	107641	Escazú - Santa Ana	3223	9864.45 02	16021 68	897887	1576706	0	35744. 15	34263.55	35744.15	0	11709 5.6	116703.9	116703.9
10202-D	Vista de Oro	0	9833 4	64848	88710	Escazú - Santa Ana	4018	0	93904 3.5	609650.8	928853.5	0	34263. 55	18800.39	34263.55	0	11670 3.9	9624.874	9624.874
10202-E	Bebedero Sur	32	1031 3	8690	25378	Escazú - Santa Ana	1096	1305.34	35248 8.5	343605.6	460989.2	0	0	0	0	0	1618.7 62	1618.762	2563.13
10202-F	Guayabos	0	2375 5	18779	25378	Escazú - Santa Ana	798	37291.1 78	46098 9.2	407261.9	460989.2	0	0	0	0	0	2563.1 3	1618.762	2563.13
10202-G	El Carmen	131	6710 7	25897	65780	Escazú - Santa Ana	3371	0	56178 0.9	468283.3	570678.4	0	18800. 39	18800.39	31911.61	0	11670 3.9	2563.13	9624.874
10202-H	Juan Santana	111	1327 7	5802	15312	Escazú - Santa Ana	462	10368.7 49	39099 9	319513	363965.8	0	0	0	0	0	1618.7 62	1214.621	1618.762
10202-I	El Curío	14	2872 5	21360	23405	Escazú - Santa Ana	2245	0	47587 9.1	450768	450768	0	18800. 39	0	0	0	2039.5 82	2039.582	2039.582
10202-J	Torrotillo	64	3536 6	21854	23477	Escazú - Santa Ana	1249	0	47978 6.1	450768	450768	0	18800. 39	0	0	0	10911 8.6	2039.582	2039.582
10202-K	Los Tejares	0	2780 2	35476	36817	Escazú - Santa Ana	1451	0	77163 9.7	795207.2	793026.8	0	0	18800.39	0	0	12338. 07	12338.07	12338.07
10202-L	Bello Horizonte Sur	78	6563 3	37291	62460	Escazú - Santa Ana	2191	11784.4 03	58701 5.5	485956.2	559768	0	31911. 61	0	18800.39	0	19013. 75	13143.56	19537.3
10203-A	San Rafael	146 6	2442 11	150731	165293	Escazú - Santa Ana	2241	7253.59 87	27879 44	1978215	2222102	0	80160. 58	36856.35	37584.68	0	45570 6.6	149240.8	149686
10203-B	Bello Horizonte Norte	101	1388 52	141968	149430	Escazú - Santa Ana	2211	4432.69 26	21544 65	2252462	2246328	0	35744. 15	35744.15	36856.35	0	13307 9.4	132687.7	131728.3
10203-C	Bello Horizonte Este	128	1361 30	114061	124846	Escazú - Santa Ana	887	0	22060 18	2112342	2168939	0	35744. 15	35744.15	35744.15	0	14278 7.3	140768.2	141436.2
10203-D	Vista Alegre	160	1984 72	172986	180819	Escazú - Santa Ana	2699	0	26161 07	2323371	2483681	0	43964. 4	37584.68	47622.85	0	69675 8.1	433107.7	440730
10203-E	Palma de Mayorca	102 6	1854 14	177501	182326	Escazú - Santa Ana	1770	8442.55 72	25655 66	2312235	2339146	0	53195. 61	39812.04	48564.87	0	16763 1.2	166865.7	174054.8
10203-F	Anonos	151 6	2493 11	235394	239584	Escazú - Santa Ana	1513	12493.7 25	30614 23	2954352	2988239	0	84187. 92	80721.3	89952.51	404.1412	74294 8.9	745737.3	745737.3
10203-G	Trejos Montealegre	346 7	2038 50	171467	199030	Escazú - Santa Ana	2867	43296.1 7	26429 59	2404214	2542905	0	71407. 75	39812.04	63621.36	0	45475 5.9	163474.4	434585

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			Radia l	Trunk- feeder	T-f improved				Radial	Trunk- feeder	T-f improved		Radial	Trunk- feeder	T-f improved		Radial	Trunk- feeder	T-f improved
10203-H	Laureles	565	1931 02	136149	141431	Escazú - Santa Ana	2331	224334. 18	25965 93	1183477	1899852	0	54307. 81	35744.15	35744.15	0	15463 4.7	118067.6	118067.6
10203-I	Matapalo	509 2	1558 63	128519	136297	Escazú - Santa Ana	2244	13106.5 45	19623 44	1200615	1266137	0	35744. 15	34263.55	34263.55	0	11845 9.4	118067.6	118067.6
10203-J	Multiplaza	550 2	2043 54	176685	187813	Escazú - Santa Ana	429	220983. 92	22325 31	2044461	2197172	2351.945	70679. 42	39083.71	62893.04	0	44755 8	156689.5	164562.7
10203-K	El Mirador	410	1692 02	149470	157566	Escazú - Santa Ana	2628	3156.35 26	21273 13	1952932	2008700	0	35744. 15	35744.15	35744.15	0	11941 8.7	118067.6	118067.6
10203-L	Guachipelín Sur	123 3	1507 98	120217	130610	Escazú - Santa Ana	3394	30092.3 14	18982 52	1163437	1237628	0	35744. 15	21152.33	34263.55	420.8193	11845 9.4	10988.63	118067.6
10203-M	Guachipelín Norte	797	1642 61	156958	166385	Escazú - Santa Ana	1861	0	19920 01	1926564	1973041	0	35744. 15	35744.15	36856.35	0	11829 4.4	118067.6	118067.6
10203-N	ZI Ruta 27	631 2	1031 98	74077	88570	Escazú - Santa Ana	392	0	10053 22	900255.4	1027775	0	21152. 33	2351.945	2351.945	0	10823. 62	10823.62	10823.62
10203-O	Multipark	162 3	1444 86	111567	117365	Escazú - Santa Ana	1069	0	12030 63	1104445	1163704	0	35744. 15	21152.33	22632.93	0	11829 4.4	118067.6	118067.6
10203-P	Loma Real	137	1207 35	88696	90148	Escazú - Santa Ana	1945	11928.7 87	10627 79	1028401	1058988	0	34263. 55	2351.945	2351.945	0	11790 2.6	10823.62	10988.63
10203-Q	Real de Pereira	18	7543 3	85296	87877	Escazú - Santa Ana	1979	9421.76 42	96930 7.6	1024626	1031855	0	21152. 33	2351.945	2351.945	0	4089.3 98	10988.63	10988.63
10301-A	Desamparados	281 2	2343 11	215317	225471	Desamparados	1068	5376.91 28	35418 96	3570743	3612383	0	55735 7.8	376602.4	376602.4	0	23935 8.8	238377	249066.7
10301-B	Los Dorados	514	2332 73	199922	199430	Desamparados	1730	6940.53 81	35117 02	3501745	3496544	0	55735 7.8	375121.8	375121.8	0	23831 1.2	238592.4	238592.4
10301-C	Multicentro	240 7	2680 13	250149	252198	Desamparados	2440	38915.8 7	38281 92	4403726	4457463	0	10960 42	437290.5	490660.4	0	25090 3	249735.2	249735.2
10301-D	Marcial Fallas	43	1894 08	189659	191672	Desamparados	1079	0	32582 61	3264064	3273717	2992.525	30889 3.7	124624.5	124624.5	17723.75	23364 6.1	233612.4	233612.4
10301-E	El Jardib	216	1734 35	167395	167500	Desamparados	1911	0	30055 96	3049430	3042353	0	12189 0.8	121890.8	121890.8	0	22552 4.6	226729.1	226371
10301-F	San Esteban	45	1453 21	138897	147406	Desamparados	3455	0	23521 20	2702276	2869906	0	88699. 9	79468.7	114653.1	0	21894 6.6	112176.7	113955.7
10301-G	Calle Fallas	89	1397 27	132449	138678	Desamparados	3282	8201.69 53	23777 33	2372413	2812095	0	67300. 36	50200.42	67300.36	0	21986 6.1	78230.26	113478
10301-H	Cucubres	240	1536 99	141432	161908	Desamparados	1729	5482.81 55	28747 83	2909615	3052666	0	11465 3.1	86666.92	118680.5	0	22093 8.9	114337.6	226729.1
10301-I	Monteclaro	88	1556 50	141473	159044	Desamparados	1307	9439.07 26	25369 53	2801125	2964367	0	11465 3.1	88699.9	118680.5	0	22024 8	112044.4	221708.3
10301-J	Contadores	3	1140 25	125976	139706	Desamparados	1607	55995.9 51	17671 19	2244702	2427545	0	50200. 42	50200.42	67300.36	0	76402. 31	76060.79	218289.3
10301-K	Torremolinos	0	1195 91	128160	151568	Desamparados	2688	5379.83 87	19555 57	2444592	2473957	0	76531. 57	76531.57	76531.57	0	22163 8.8	229735.2	235404.9
10301-L	Loma Linda	0	2162 29	219279	253390	San Sebastián - Paso Ancho	1876	3161.64 04	30738 99	3629252	3789816	0	15801 6.7	155283.1	155283.1	0	24858 7.9	256362.9	257358.6
10301-M	San Jerónimo	748	1986 67	199758	215305	San Sebastián - Paso Ancho	4161	2595.49 36	33033 75	3442045	3517921	0	31037 4.3	126105.1	126105.1	0	24201 8	249065.7	249673.5
10301-N	Colonia del Sur	72	2667 81	251675	254499	Desamparados	955	706.666 66	38060 38	4465974	4495406	0	10960 42	419055.5	472425.4	0	25060 3.1	253745.3	253745.3
10301-O	Loto	24	2084 16	197889	203261	San Sebastián - Paso Ancho	2273	9335.94 91	33914 68	3459256	3489020	0	39122 3.2	308893.7	310374.3	0	24682 9.5	250498.2	250890

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10302-A	San Miguel	572	1227 52	122565	125881	Desamparados	3592	4407.77 09	21507 96	2160397	2191229	0	50200. 42	50200.42	50200.42	0	75151. 65	75151.65	75842.58
10302-B	San Martín	101	1480 96	134336	137225	Desamparados	2209	0	23545 44	2649095	2705888	0	11465 3.1	67300.36	67300.36	0	21859 0	111129.1	111606.8
10302-C	La Orquídea	99	1552 81	144336	152206	Desamparados	980	4073.66 47	28123 34	2733808	2800385	0	11465 3.1	114653.1	114653.1	0	21859 0	111129.1	218685.8
10302-D	Meseguer	294	1620 51	156603	157375	Desamparados	1246	0	29143 41	2830728	2883848	0	11868 0.5	114653.1	114653.1	0	22317 5.6	218685.8	221034.7
10302-E	Lomas Norte	32	8730 3	87938	91593	Desamparados	1650	2923.39 29	14848 61	1850401	1903634	0	11397. 66	11397.66	11397.66	0	51316. 69	51583.05	52806.5
10302-F	Lomas Sur	80	7309 0	66380	82283	Desamparados	1988	0	13175 31	940379.5	1389867	0	6553.1 35	6553.135	11397.66	0	51000. 91	50302.83	51584.3
10302-G	La Capri Norte	0	9111 6	89264	94989	Desamparados	1902	3530.72 34	14698 43	1931869	1981320	0	11397. 66	11397.66	11397.66	0	72649. 15	73043.45	73476.63
10302-H	La Capri Sur	21	9111 6	87474	91111	Desamparados	1627	4517.43 29	14698 43	1451480	1960124	0	11397. 66	11397.66	11397.66	0	72649. 15	71483.11	73476.63
10302-I	San José	89	9851 3	92866	94208	Desamparados	3032	0	14974 49	1941902	1962573	0	11397. 66	11397.66	11397.66	1138.917	73600. 66	71877.41	72310.59
10302-J	Casa Cuba	229	7667 9	78167	79992	Desamparados	1225	0	12638 79	1269585	1325566	0	4104.7 24	7837.048	11397.66	0	50716. 56	49550.52	50644.45
10302-K	Los Olivos	118	8057 5	79869	83770	Desamparados	2439	4387.93 09	13687 54	1371500	1467180	0	7837.0 48	7837.048	11397.66	0	51234. 89	50418.26	52102.63
10302-L	Sabanillas	0	5079 0	42566	44654	Desamparados	2540	0	59260 8.5	205621.7	219457.4	0	2992.5 25	2992.525	2992.525	0	37776. 41	23066.29	23066.29
10302-M	El Llano	0	4112 1	41258	47330	Desamparados	887	4622.93 01	18685 2.8	195571.8	509180.8	0	2992.5 25	2992.525	2992.525	0	22754. 81	22754.81	24015.25
10302-N	Jericó	76	534	314	493	Desamparados	507	0	15271. 48	10883.55	23130.74	0	0	0	0	518.3329	2265.1 35	1126.217	1561.658
10302-O	El Manzano	144	266	266	266	Desamparados	766	0	0	0	0	0	0	0	0	0	518.33 29	518.3329	518.3329
10302-P	Higuito	48	6296 8	76998	78331	Desamparados	3037	6427.29 92	97045 7.4	1058252	1274583	0	2992.5 25	7837.048	7837.048	435.4404	44575. 19	48396.98	49550.52
10302-Q	Santa Bárbara	48	5015 8	45138	46683	Desamparados	6882	6260.62 07	64207 3.2	232843.5	262088.6	0	2992.5 25	2992.525	2992.525	607.8844	32106. 68	23630.86	24015.25
10302-R	Rodillal	0	4335 5	49174	51374	Desamparados	1218	0	20928 2.9	568347.3	733239.6	0	2992.5 25	2992.525	2992.525	0	22547. 96	23496.92	29689.82
10302-S	Encinales	0	4587 8	57499	57681	Desamparados	1079	0	25671 0.2	722166.9	821016.8	0	2992.5 25	2992.525	2992.525	0	23112. 52	44972.53	45100.46
10302-T	El Tablazo	0	0	0	0	Desamparados	647	0	0	0	0	0	0	0	0	0	0	0	0
10303-A	San Juan	217	9143 5	83210	91500	San Sebastián - Paso Ancho	6461	16236.7 94	11663 58	1173502	1220502	0	6553.1 35	6553.135	6553.135	0	17835 0.5	65156.65	67115.61
10303-B	Itaipú	454	9752 3	89045	95759	San Sebastián - Paso Ancho	3840	81.4604 9	11893 39	1166742	1308783	0	6553.1 35	6553.135	6553.135	0	19554 7.3	74585.71	90827.02
10303-C	Máquina	199	7813 0	65012	78902	San Sebastián - Paso Ancho	6651	10993.0 65	80122 2.7	691213.8	896882.5	0	6553.1 35	6553.135	6553.135	867.7433	64196. 46	54331.96	64336.81
10303-D	Tanques	467	6703 1	49895	58078	San Sebastián - Paso Ancho	2630	0	65475 0.6	540836.2	587078.5	0	6553.1 35	6553.135	6553.135	0	54628. 91	54020.48	54020.48
10304-A	San Rafael Arriba	102	1236 64	128963	132369	Desamparados	3319	6688.47 81	22973 10	2341973	2389486	0	50200. 42	50200.42	50200.42	371.5217	78230. 26	78230.26	78921.19

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10304-B	El Bambú	115	1335 42	136663	137338	Desamparados	3581	1226.69 37	23610 94	2774603	2799933	0	67300. 36	67300.36	67300.36	0	11256 0.9	113478	113955.7
10304-C	Juncales	262 4	1540 77	145303	147296	Desamparados	2485	24460.7 34	24284 03	2764283	2907578	0	11465 3.1	105421.9	105421.9	0	22024 8	113478	113955.7
10304-D	Calle Lajas	0	4772 4	48218	52579	Desamparados	859	1431.95 75	27584 6.1	299430.6	590243	0	2992.5 25	2992.525	2992.525	0	30550. 87	30166.48	33564.15
10304-E	ZI San Rafael Arriba	199 27	6591 4	64177	66859	Desamparados	2210	0	10826 54	790183.3	985482.7	0	6553.1 35	2992.525	6553.135	0	50129. 53	49719.44	50302.83
10304-F	Macarena	733	8621 9	79110	84375	Desamparados	1608	0	13917 60	1042821	1458592	0	7665.3 34	10285.46	10285.46	0	53192. 21	50383.17	54493.55
10304-G	Maiquetía	137	1064 29	104070	115961	San Sebastián - Paso Ancho	4235	8718.98 67	17648 16	2095212	2180941	0	11397. 66	11397.66	11397.66	0	75686. 33	75952.7	85660.6
10304-H	Alpino	39	8589 5	87434	102120	San Sebastián - Paso Ancho	3049	0	15301 71	1237722	1424697	0	6553.1 35	10285.46	10285.46	0	74579. 78	73796.97	84112.76
10304-I	Méndez	115	8152 8	65423	75720	San Sebastián - Paso Ancho	2676	0	11788 06	971767.5	1139101	0	6553.1 35	6553.135	6553.135	0	63321. 99	63321.99	65280.96
10305-A	San Antonio	682	2042 21	207755	207918	San Francisco	1970	9501.48 81	34328 11	3512987	3529896	0	76711 0.3	972624.1	972624.1	0	22873 3.3	222647.3	229173.5
10305-B	Las Acacias	14	1592 55	173061	183465	San Francisco	1483	0	31119 49	3331801	3414901	0	42090 3.7	424931	651619.4	0	21344 0.7	212672.1	221024.8
10305-C	Huetares	255	1864 04	205980	212831	San Francisco	1175	1632.86 54	34708 26	3514662	3546336	0	89200 0.9	976629.3	976629.3	0	22072 5	223624.7	230018.4
10305-D	Escuela Panamá	312	2031 13	205379	211045	San Francisco	1720	0	34100 06	3530390	3549166	0	70241 7	972624.1	972624.1	0	23052 8.2	232072.3	232232.8
10305-E	Plazoleta	404	2030 58	219902	226141	San Francisco	2456	5628.98 65	33788 98	3592030	3649856	0	70745 8.2	847733.5	768146.3	296.9542	23360 2.7	236145.5	237405.8
10305-F	Cruz Roja	481	1933 20	200128	201000	San Francisco	1354	0	32419 20	3392988	3420517	0	41025 6.7	428491.6	428491.6	311.4774	23360 2.7	235511	236770.5
10307-A	Patarrá	182	8832 3	97355	118877	San Francisco	881	93470.0 99	24648 02	2494831	2615101	0	22830. 49	28095.05	37886.98	127.934	66751. 36	66304.78	67345.84
10307-B	Los Ángeles	11	3411 7	33833	33881	San Francisco	1529	0	14669 31	1499013	1507663	0	6724.8 5	6724.85	6724.85	0	24954. 54	25338.94	25338.94
10307-C	Quebrada Honda	60	1843 0	22127	19822	San Francisco	2367	1109.17 86	12264 50	1348740	1359228	0	0	3732.324	3732.324	215.3917	5535.7 48	6279.194	6279.194
10307-D	Guatuso	126	7969 1	90120	91060	San Francisco	2827	7757.07 2	21036 53	2157039	2157039	0	6724.8 5	7837.048	7837.048	267.612	43172. 17	43172.17	44030.48
10307-E	Cemex	718 9	5036 0	52296	52921	San Francisco	1527	7913.64 56	10318 19	1081524	1093669	0	2992.5 25	6724.85	6724.85	0	26197. 66	26941.1	26941.1
10307-F	Los Alpes	0	5107 0	45413	50692	Desamparados	1693	2262.31 5	89150 2	545438.2	641573.2	0	2992.5 25	2992.525	2992.525	0	25222. 76	24620.18	30505.31
10307-G	El Lince	0	4677 5	45127	47558	Desamparados	1869	2413.41 72	56143 2.2	335391.2	577181.5	0	2992.5 25	2992.525	2992.525	0	24394	23635.69	24620.18
10310-A	Fátima	304	1257 24	134686	139970	San Francisco	3389	9077.64 3	28262 98	2990235	2981747	0	10792 8	147848.6	147848.6	395.2303	10170 0.8	101700.8	208779.8
10310-B	San Lorenzo	411	1460 71	139838	141576	San Francisco	3416	202174. 26	29546 87	3002828	3020372	0	41817 0	170395.6	170395.6	758.3105	20921 0.5	208514.4	211444.8
10310-C	Dos Cercas	27	1281 11	90917	92975	Desamparados	3254	4629.79 8	25912 48	2491859	2524000	0	63739. 75	22830.49	22830.49	0	10946 4.9	47670.96	48106.4
10310-D	NS de la Esperanza	69	1216 83	69998	75737	Desamparados	1514	0	25602 62	2168653	2353364	0	46639. 81	7837.048	11397.66	0	71565. 58	44101.3	45059.24

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10310-E	Formentera	38	1280 74	80876	112067	Desamparados	1733	1466.33 01	26007 94	2360793	2466708	0	63739. 75	7837.048	11397.66	0	10839 1.2	49771.04	73443.42
10311-A	San Rafael Abajo	663	1466 27	138831	146303	San Sebastián - Paso Ancho	2221	5159.17 78	19268 09	1742589	1840847	0	49494. 47	48013.87	59286.4	2494.952	24321 0.1	242341.5	245466.5
10311-B	Los Geranios	0	1112 26	107042	110646	San Sebastián - Paso Ancho	1047	0	16628 64	1651550	1714247	0	11397. 66	11397.66	11397.66	0	19889 5.6	93356.88	94956.1
10311-C	Santa Cecilia	312	1145 08	105330	107732	San Sebastián - Paso Ancho	2127	0	16826 74	1408009	1458833	0	7665.3 34	7665.334	11397.66	0	20741 2.2	91410.41	93369.38
10311-D	Los Ángeles	134	1076 61	101224	106439	San Sebastián - Paso Ancho	3360	3866.27 45	13081 01	1421743	1461711	0	6553.1 35	6553.135	7665.334	0	20355 6.3	94837.07	96796.03
10311-E	Autofores	392	1268 49	125843	133817	San Sebastián - Paso Ancho	2265	7552.93 85	14435 19	1681101	1749364	0	14410. 5	12929.9	34646.26	0	20355 6.3	208010.9	211719.3
10311-F	Zonacentro	946	1516 20	158181	173447	San Sebastián - Paso Ancho	1673	17785.6 56	19607 40	1861245	1971864	3560.61	53521. 81	78307.18	88442.54	0	24579 3.1	249920.2	253480.6
10311-G	Gardenia	296	1579 23	136876	160330	San Sebastián - Paso Ancho	2534	2374.63 28	19137 33	1981788	2038414	0	63313. 74	74279.84	74279.84	0	24397 2.9	245948.8	249246.6
10311-H	Valencia Oeste	0	1103 83	124358	131858	San Sebastián - Paso Ancho	2350	15875.5 24	17256 37	1471826	1565703	0	41683. 66	39261.04	57805.8	0	23903 0.9	239639.3	242379.7
10311-I	Valencia Este	240	8580 0	105454	111094	San Sebastián - Paso Ancho	3513	792.198 43	11683 21	1277843	1367743	0	6553.1 35	7665.334	7665.334	0	20043 1.5	198047.8	207179.7
10312-A	Gravilias	235	1724 44	163591	171932	Desamparados	2113	1735.57 65	30111 38	2980406	3099123	0	12189 0.8	117863.5	121890.8	0	23090 5.4	220419.4	225563.1
10312-B	La Fortuna	322	1908 76	183735	184499	Desamparados	1054	0	32444 31	3228784	3296791	0	30889 3.7	124624.5	124624.5	0	23256 4.8	232564.8	233827.8
10312-C	La Fortunita	150	1872 79	168022	177160	Desamparados	933	0	31872 43	3058910	3162585	0	30889 3.7	117863.5	121890.8	0	23256 4.8	222675.8	226052.7
10312-D	Damasco	126	1668 46	141443	148402	Desamparados	1732	2527.16 11	28981 07	2757597	2925463	0	11833 0.2	67300.36	93253.59	0	22241 3.8	109607.6	112947.9
10312-E	Porvenir	48	1289 36	132981	148182	Desamparados	2306	6236.73 73	26308 27	2674732	2888740	0	63739. 75	67300.36	114653.1	0	11016 5.1	109607.6	113555.8
10312-F	Lomas de Salitral	14	1174 08	94279	113003	Desamparados	1422	2476.13 49	24957 57	2349580	2525064	0	63739. 75	11397.66	35206.98	0	10753 1.6	50731.76	73312.92
10312-G	Los Claveles	0	7267 0	63111	102003	Desamparados	1861	44634.4 55	18402 97	1784739	1952501	0	7837.0 48	7837.048	11397.66	0	60937. 49	47385.97	69574.93
10312-H	Villa Nueva	526	1641 45	160481	165025	Desamparados	1833	0	29556 97	2981096	3008130	0	11868 0.5	118680.5	121890.8	0	22316 3.7	225681.5	226729.1
10312-I	Los Diamantes	166	1541 50	146608	148726	Desamparados	1923	7241.20 71	27342 96	2792894	2855115	0	11465 3.1	114653.1	114653.1	0	21859 0	112430.4	112908.1
10312-J	La Cartonera	639	1343 58	134336	136416	Desamparados	453	0	22384 59	2649095	2788303	0	67300. 36	67300.36	67300.36	0	10948 2.3	111129.1	112908.1
10313-A	Los Guido	112	7076 7	68764	72448	Desamparados	2630	409.778 86	16387 77	1648387	1697357	0	6724.8 5	6724.85	6724.85	0	47891. 44	50386.4	50386.4
10313-B	Sector 3	0	7064 5	67220	69949	Desamparados	2243	0	20295 13	2028182	2030066	0	6724.8 5	6724.85	6724.85	0	47891. 44	50386.4	50386.4
10313-C	Sector 4	0	6949 4	72690	72903	Desamparados	1522	447.223 17	16434 31	1684756	1706371	0	2992.5 25	6724.85	6724.85	0	47891. 44	50386.4	50386.4
10313-D	Sector 5	0	7974 7	79529	79877	Desamparados	1496	0	17223 37	1721585	1760227	0	7837.0 48	7837.048	7837.048	0	51552. 43	50386.4	50386.4
10313-E	Sector 6	0	8145 1	82936	84258	Desamparados	2720	0	17968 79	1835320	1895007	0	7837.0 48	7837.048	11397.66	0	51552. 43	51254.14	51254.14

Code	Name	Jobs	Jobs accessibility			Transit zone	Populati on	Recreati on square meters	Recreation accessibility			Universities square meters	Universities accessibility			Healthcare square meters	Healthcare accessibility		
			Radial	Trunk- feeder	T-f improved				Radial	Trunk- feeder	T-f improved		Radial	Trunk- feeder	T-f improved		Radial	Trunk- feeder	T-f improved
10313-F	Balcón Verde	0	8445 5	83377	85018	Desamparados	2084	0	14276 63	1421580	1913882	0	7837.0 48	11397.66	11397.66	0	50942. 74	50644.45	51254.14
10313-G	Sector 8	0	6828 9	59730	68696	Desamparados	2964	0	12428 21	1063136	1267424	0	2992.5 25	2992.525	2992.525	0	49193. 32	49193.32	50859.84
10313-H	Sector 7	0	6828 9	54247	68696	Desamparados	2269	0	12428 21	917345.8	1267424	0	2992.5 25	2992.525	2992.525	0	49193. 32	38547.56	50859.84
10313-I	Sector 1	256	5671 2	56095	59684	Desamparados	5577	23845.5 2	10225 12	956449	1497638	0	2992.5 25	2992.525	2992.525	1958.966	46170. 31	38762.95	43197.22
10601-A	Aserri	112 2	6125 4	62682	65913	Desamparados	2220	2978.97 67	81839 4.5	956134.3	1028127	0	6553.1 35	6553.135	6553.135	0	47097. 37	49427.33	51430.78
10601-B	Cinco Esquinas	227	4748 8	46068	46364	Desamparados	1678	12045.2 08	57555 3.3	303565	321815.2	0	6553.1 35	6553.135	6553.135	0	31079. 1	30694.71	30694.71
10601-C	María Auxiliadora	59	5303 1	50429	50743	Desamparados	4277	398.054 69	75969 1.9	648461.6	740639.2	0	6553.1 35	6553.135	6553.135	0	38952. 35	38952.35	40911.32
10601-D	Cañas	162	9930 5	109464	112181	Desamparados	2370	0	15993 07	2057649	2246351	0	11397. 66	21189.59	21189.59	0	76119. 51	76653.49	76781.42
10601-E	Corazón de Jesús	589	6569 7	63194	63592	Desamparados	5625	3369.65 32	10001 48	878021.2	917690.4	0	6553.1 35	6553.135	6553.135	5669.735	51405. 29	50847.39	50847.39
10601-F	Tres Marías	117	4821 6	46581	46679	Desamparados	1589	4321.28 5	33368 6.6	327735.5	386732.6	0	6553.1 35	6553.135	6553.135	0	31215. 11	30694.71	30694.71
10601-G	Poás	22	4940 3	26104	50290	San Sebastián - Paso Ancho	2922	4947.36 65	54023 7.1	418242.2	553102.3	0	6553.1 35	6553.135	6553.135	0	32955. 63	31816.71	32955.63
10601-H	Santa Rita	54	4441 2	24084	44394	San Sebastián - Paso Ancho	1366	0	32164 8.5	284368.7	375903.5	0	6553.1 35	6553.135	6553.135	0	30515. 37	30515.37	30515.37
10601-I	San José de la Montaña	0	1552 9	12430	20169	San Sebastián - Paso Ancho	1796	0	18025 6.5	183081.3	297219.3	0	3560.6 1	3560.61	6553.135	0	10788. 17	10788.17	30515.37
10601-J	El Alto	0	270	270	791	San Sebastián - Paso Ancho	267	0	4947.3 67	4947.367	4947.367	0	0	0	0	0	0	0	0
10601-K	Mercedes	126	4228 4	39125	41216	Desamparados	4085	0	24903 9.4	207032.2	255657.2	0	6553.1 35	2992.525	6553.135	0	29962. 31	28511.92	29650.84
10601-L	Lourdes	160	3912 5	7955	38110	Desamparados	519	0	20703 2.2	92788.42	202413	0	2992.5 25	0	2992.525	0	28511. 92	8293.217	28511.92
10607-A	Salitrillos	335	4233 0	38659	42041	Desamparados	3609	5073.05 03	24903 9.4	206950.7	259479.4	0	6553.1 35	2992.525	6553.135	1166.036	29962. 31	28511.92	29650.84
10607-B	Suárez	67	4068 7	15484	40031	Desamparados	1806	3592.98 71	22655 3.4	176700.8	221996.1	0	6553.1 35	2992.525	2992.525	0	29650. 84	26016.97	28511.92
10607-C	Palo Blanco	128	6666 9	3453	6214	Desamparados	1344	0	65205. 61	37375.22	70554.94	0	0	0	0	0	7425.4 73	1755.738	1755.738
10607-D	Santa Teresita	0	6209 9	50371	63361	Desamparados	2964	1050.48 97	95983 6.4	649893.5	900412.7	0	6553.1 35	6553.135	6553.135	218.1804	46749. 41	38952.35	50847.39
10607-E	El Huazo	13	5298 3	57598	58284	Desamparados	2811	0	69166 7.9	723740.6	733756.4	0	2992.5 25	2992.525	2992.525	0	37776. 41	45190.71	48203.99
10607-F	Rincón	46	601	601	900	Desamparados	776	0	10746. 47	10746.47	23189.73	0	0	0	0	0	1902.5 5	1902.55	1902.55
10801-A	Guadalupe	387 1	3124 49	306146	326647	Guadalupe - Coronado	3472	17048.4 32	46161 70	3830878	4552089	0	13758 51	1343940	1357051	0	52586 8.7	525637	535234
10801-B	El Jardín	543	2535 55	248356	251717	Guadalupe - Coronado	2304	17208.5 29	40822 74	3395601	3446739	0	13569 55	1338720	1338720	883.9448	24215 5	241792.6	241792.6
10801-C	Miraflores	38	2627 98	267720	288140	Guadalupe - Coronado	389	0	42212 45	3410270	3593449	0	13575 20	1338720	1338720	0	24336 1.6	504353.3	504353.3

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			Radial	Trunk- feeder	T-f improved				Radial	Trunk- feeder	T-f improved		Radial	Trunk- feeder	T-f improved		Radial	Trunk- feeder	T-f improved
10801-D	La Margarita	1123	385703	357941	370900	Guadalupe - Coronado	1088	13264.063	4913430	5198322	5276373	0	1589206	1567411	1567411	0	536811.6	535961.6	535850.7
10801-E	Santa Eduviges	2505	273104	263112	277565	Guadalupe - Coronado	3255	19407.977	4461235	3617092	3767017	0	1438023	1338720	1338720	374.6127	243951.7	242584.9	242474
10801-F	La Independencia	329	234909	225595	231235	Guadalupe - Coronado	3537	0	2782333	2946187	2978949	0	1338720	1334988	1338720	0	240099	240481.3	240370.4
10801-G	San Gerardo	195	268613	265046	267989	Guadalupe - Coronado	1454	0	4285833	3497862	3618546	0	1438023	1338720	1338720	0	242650.3	242287.9	242584.9
10801-H	Santo Cristo	237	221584	218551	221809	Guadalupe - Coronado	1802	1564.988	2733978	2697177	2715146	0	1334988	1334988	1334988	299.9419	238362.5	231819.2	238102
10801-I	El Roblar	80	200084	194987	197316	Guadalupe - Coronado	2176	3276.4062	2487409	2507279	2535293	0	1334988	1319994	1319994	0	230850	229401.1	229401.1
10801-J	El Alto Sur	383	222986	219107	221673	Guadalupe - Coronado	1322	9084.901	2748785	2697753	2709850	0	1334988	1334988	1334988	0	238473.4	231819.2	238102
10802-A	San Francisco	638	392573	356330	361125	Guadalupe - Coronado	1079	20136.922	4429866	4045756	4144433	0	1574302	1542181	1570013	489.6253	537272.6	535931.9	536500.8
10802-B	Carlos María Ulloa	193	357238	348194	350095	Guadalupe - Coronado	1139	14516.104	4389834	4211954	4672600	0	1567411	1548610	1567411	0	536338.2	535456.4	535456.4
10802-C	Tournón	1227	422251	395125	408619	Guadalupe - Coronado	160	1870.1331	4987337	4687569	5002371	9231.203	1648278	1648278	1648278	0	545055.8	538909.6	541176.6
10803-A	Calle Blancos	3461	339560	326976	331319	Guadalupe - Coronado	1849	0	3884186	3075732	3153948	0	1567020	1535109	1535109	0	611481.4	609089.4	612846.9
10803-B	Coca Cola	2011	246798	238480	247191	Guadalupe - Coronado	545	0	3417138	2640926	3139255	0	1420887	1420887	1420887	0	239232.1	239384.1	239384.1
10803-C	Los Pinos	4392	378027	361629	375106	Guadalupe - Coronado	1979	10202.862	4455992	3540327	4270254	0	1669315	1619169	1632280	0	636774.4	645193.5	646363
10803-D	San Gabriel	303	362453	343637	358373	Tibás - Santo Domingo	1668	0	4050955	3701633	3893882	0	1632694	1267187	1286716	0	598587.6	595033.6	600395.3
10803-E	Esquivel Bonilla	1475	234769	219900	230166	Guadalupe - Coronado	569	4116.4681	2785500	2319036	2977611	0	1420887	1334988	1334988	0	238282.5	238640.6	239384.1
10803-F	San Antonio	1605	232652	219430	228943	Guadalupe - Coronado	1140	0	2743995	2616228	3032918	0	1334988	1334988	1334988	0	238640.6	239129.8	239873.2
10803-G	Santo Tomás	168	231173	226238	236026	Guadalupe - Coronado	1619	6857.6099	2615164	2449399	2479980	0	1407851	1416882	1416882	0	238130.5	238052.3	239025.9
10803-H	Montelimar	451	199173	201021	204282	Guadalupe - Coronado	1400	0	1739494	1890356	1934086	0	1246270	1306958	1315989	0	229675.9	230209.7	230439.9
10803-I	El Encanto	649	203083	212236	213372	Guadalupe - Coronado	2844	24202.414	1808511	2046914	2082247	0	1128631	1321184	1321184	0	234730.8	229393.2	236825.9
10803-J	El Ciprés	115	247723	230629	236516	Guadalupe - Coronado	3279	586.45756	2933011	2105697	2174527	0	1239889	1239889	1239889	0	236179.6	212828.6	212828.6
10804-A	El Carmen	304	106785	112526	117043	Guadalupe - Coronado	5014	16025.831	1911531	1929913	1957527	0	1240632	1240632	1240632	658.6734	70801.12	68182.24	70801.12
10804-B	La Cruz	67	135021	142367	141012	Guadalupe - Coronado	6034	13093.124	2141267	2073121	2217204	0	1269870	1269870	1269870	0	185451.2	189937	185603.2
10804-C	Tepeyac	338	141947	143846	146191	Guadalupe - Coronado	5621	25793.534	2093514	2183938	2196908	0	1269870	1282470	1282470	0	189814.4	190328.8	190328.8
10804-D	Lourdes	774	85779	85288	85288	Guadalupe - Coronado	2092	27876.105	1701042	1708926	1723090	0	1065772	1197637	1197637	0	68544.67	68182.24	68182.24
10804-E	Jaboncillal	35	44275	47434	48893	Guadalupe - Coronado	2559	13800.083	1156120	1148827	1193481	0	601440	476549.4	605445.2	0	66828.73	66012.14	66828.73

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			Radia l	Trunk- feeder	T-f improved				Radial	Trunk- feeder	T-f improved		Radial	Trunk- feeder	T-f improved		Radial	Trunk- feeder	T-f improved
10804-F	Yoyita	0	2014	2077	2077	Guadalupe - Coronado	326	0	15110 8.8	151465.6	151465.6	0	0	0	0	0	1147.8 32	1147.832	1147.832
10804-G	La Estefana	0	8704 1	55623	78018	San Pedro - Curridabat - Tres Ríos	1076	1133.81 7	17182 61	1457697	1624054	0	12288 70	1206631	1224843	0	15459 9.7	115704.7	152760.1
10805-A	Ipís	339	1305 07	122759	124680	Guadalupe - Coronado	3755	11681.1 32	15720 73	1549580	1553534	0	12024 43	1202443	1202443	0	18462 8.7	68596.87	70972.58
10805-B	Zetillal	160 9	8378 1	84728	84728	Guadalupe - Coronado	6577	23756.5 02	12544 55	1321568	1321568	0	83096 2.2	830962.2	830962.2	522.1992	66856. 75	66856.75	66856.75
10805-C	La Mora	705	7855 4	82956	82956	Guadalupe - Coronado	4389	5976.96 26	11514 41	1301929	1301929	0	81392 0.2	821731	821731	0	66856. 75	66856.75	66856.75
10805-D	Rodrigo Facio	227	9321 9	88611	88611	Guadalupe - Coronado	5552	0	13431 40	1344651	1344651	0	83096 2.2	830962.2	830962.2	0	67673. 35	66856.75	66856.75
10805-E	El Alto Norte	406	1932 37	184963	187898	Guadalupe - Coronado	2817	0	21066 10	2373348	2388855	0	12934 59	1278465	1283951	0	23060 2.8	229153.9	229153.9
10805-F	Korobó	96	1063 45	113305	115585	Guadalupe - Coronado	4053	8038.84 93	14383 78	1495398	1496250	0	10235 60	1202443	1202443	0	67521. 36	68104.05	68104.05
10805-G	Los Cafetos	65	1285 89	117619	117856	Guadalupe - Coronado	2997	0	15412 93	1500488	1504582	0	12024 43	1202443	1202443	0	18462 8.7	68104.05	68334.23
10805-H	Mozotal	56	1525 01	143495	144867	Guadalupe - Coronado	1625	6045.03 9	18817 82	1869262	2246737	0	12177 77	1217777	1278465	0	21114 2.1	190077.3	189966.4
10806-A	Rancho Redondo	45	133	339	339	Guadalupe - Coronado	873	2643.96 95	2643.9 7	77337.42	77337.42	0	0	0	0	220.5891	220.58 91	709.7474	709.7474
10806-B	Guayabillos	88	133	133	133	Guadalupe - Coronado	343	0	2643.9 7	2643.97	2643.97	0	0	0	0	0	220.58 91	220.5891	220.5891
10806-C	El Durazno	14	1259 2	12704	12704	Guadalupe - Coronado	876	0	37910 5.6	396210.4	396210.4	0	0	0	0	0	25628. 22	26207.54	26207.54
10806-D	Vista de Mar	192	3565 2	41054	41054	Guadalupe - Coronado	2542	74693.4 5	72585 0.5	782962.2	782962.2	0	50128. 54	51070.55	51070.55	489.1583	31451. 31	31603.3	31603.3
10807-A	Purral	364	1522 31	151653	168007	Guadalupe - Coronado	4129	7501.39 96	17972 28	2225413	2226026	0	12784 65	1278465	1279946	0	21087 9.2	189966.4	197839.6
10807-B	Ana Frank	348	1452 96	142630	143820	Guadalupe - Coronado	2859	10584.6 34	17592 90	2217001	2207851	0	12177 77	1278465	1278465	0	21114 2.1	190077.3	189966.4
10807-C	Heliconias	186	1352 46	136212	138289	Guadalupe - Coronado	5916	3919.25 26	15305 09	1980704	1999172	0	12024 43	1263131	1263131	1198.428	18548 0.5	189574.6	189966.4
10807-D	Los Nogales	45	1295 78	134097	135517	Guadalupe - Coronado	1911	3652.94 17	14666 23	1568837	1953131	0	12024 43	1202443	1263131	0	18508 8.8	189574.6	185240.7
10807-E	Eva María	2	1015 04	101920	104437	Guadalupe - Coronado	1788	10361.2 01	13120 80	1324063	1329009	0	89866 8.9	898668.9	898668.9	0	67521. 36	67521.36	67751.54
10807-F	Los Cuadros	627	9833 3	97459	99976	Guadalupe - Coronado	8503	14503.4 61	12875 93	1325242	1330188	0	89663 5.9	872715.7	872715.7	0	67521. 36	67521.36	67751.54
10807-G	El Pueblo	642	7343 7	75253	75209	Guadalupe - Coronado	6145	5620.16 33	14366 94	1164103	1529421	0	81392 0.2	822951.2	813920.2	0	66934. 94	66934.94	66934.94
10807-H	María Beatriz	295	4776 5	54011	54011	Guadalupe - Coronado	2421	5661.82 92	78359 0.9	841883.1	841883.1	0	41414 8.5	414148.5	414148.5	0	66215. 14	66367.13	66367.13
10901-A	Santa Ana	298 0	9223 4	84771	88065	Escazú - Santa Ana	2941	8579.28 47	10333 46	1030488	1042482	0	21152. 33	2351.945	2351.945	668.0127	4369.1 53	4594.896	4594.896
10901-B	Obando	198 9	8144 5	77295	79694	Escazú - Santa Ana	805	4125.66 05	99172 1.8	944167	976659.6	0	2351.9 45	2351.945	2351.945	0	4369.1 53	3965.012	4594.896
10901-C	INVU Santa Ana	422	8272 5	81079	84504	Escazú - Santa Ana	2885	32376.1 84	99899 5	987923.2	1028858	0	2351.9 45	2351.945	2351.945	0	4369.1 53	3965.012	4594.896

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			Radial	Trunk- feeder	T-f improved				Radial	Trunk- feeder	T-f improved		Radial	Trunk- feeder	T-f improved		Radial	Trunk- feeder	T-f improved
10901-D	Cruz Roja	210 2	9460 1	88916	88916	Escazú - Santa Ana	1104	8215.74 22	10338 46	1041368	1041368	0	21152. 33	2351.945	2351.945	0	4369.1 53	10988.63	10988.63
10901-E	Cabañas	50	6777 0	69879	79694	Escazú - Santa Ana	1097	0	96833 4.8	935317.4	976659.6	0	2351.9 45	2351.945	2351.945	0	4369.1 53	3965.012	4594.896
10901-F	San Rafael	87	6742 4	67234	67234	Escazú - Santa Ana	1160	34410.3 51	99697 9.5	1016311	1016311	0	2351.9 45	2351.945	2351.945	0	4369.1 53	4594.896	4594.896
10901-G	Aguas Lindas	921	1428 02	115417	119631	Escazú - Santa Ana	1858	1318.71 67	12057 94	1115538	1157950	0	35744. 15	21152.33	34263.55	523.5483	11806 7.6	10988.63	10988.63
10901-H	Alto Palomas	262	1502 02	118156	138828	Escazú - Santa Ana	679	0	18890 86	1192950	1273747	0	35744. 15	34263.55	34263.55	0	11845 9.4	10988.63	118067.6
10902-A	Salitral	118	3046 5	57579	61110	Escazú - Santa Ana	2105	5943.67 23	28333 8.7	903032.8	923388.6	0	0	2351.945	2351.945	165.0042	2555.3 15	3965.012	3965.012
10902-B	Los Montoya	6	2432 0	56439	59322	Escazú - Santa Ana	1353	0	51492 6.5	883382.1	910286.4	0	0	2351.945	2351.945	0	2555.3 15	3617.18	3965.012
10902-C	Matinilla Norte	44	1272 3	35819	49406	Escazú - Santa Ana	447	0	17553 1	286981.8	656509.1	0	0	0	0	0	2110.1 01	2555.315	3617.18
10902-D	Matinilla Sur	13	3298	20716	23085	Escazú - Santa Ana	720	0	48933. 31	272048.4	280343.1	0	0	0	0	0	833.01 69	2555.315	2555.315
10903-A	Pozos	161 4	6975 0	73261	75361	Escazú - Santa Ana	1861	4526.21 87	90853 8.3	916602.5	925452.9	0	2351.9 45	2351.945	2351.945	445.2138	2976.1 34	3617.18	3965.012
10903-B	Las Cuevas	641	7984 4	82713	83262	Escazú - Santa Ana	2549	1175.50 08	98223 7.8	998331.4	1008603	0	2351.9 45	2351.945	2351.945	0	3380.2 75	4369.153	4369.153
10903-C	Honduras	200 3	6244 6	65243	72388	Escazú - Santa Ana	3986	3990.46 27	89638 8.6	909832.1	913364.8	0	2351.9 45	2351.945	2351.945	0	2811.1 3	3617.18	3617.18
10903-D	Pavicén	291 7	7311 6	84427	86345	Escazú - Santa Ana	1732	2678.26 82	98750 3.1	1026823	1033758	0	2351.9 45	2351.945	2351.945	0	4204.1 49	10988.63	10988.63
10903-E	Real Oeste	2	7473 0	79427	79549	Escazú - Santa Ana	1093	6945.57 84	95720 4.4	965268.6	965675.6	0	2351.9 45	2351.945	2351.945	0	2976.1 34	3617.18	3617.18
10903-F	Real Este	0	3186 0	34757	35019	Escazú - Santa Ana	624	0	67761 0.4	686285.7	686285.7	0	2351.9 45	2351.945	2351.945	0	420.81 93	1061.866	1061.866
10903-G	Santa Ana CC	178	7624 6	82157	82851	Escazú - Santa Ana	636	80990.5 85	96969 8.1	986355.4	990662.1	0	2351.9 45	2351.945	2351.945	0	3380.2 75	4021.322	4021.322
10903-H	Lajas	84	3187 1	31860	32331	Escazú - Santa Ana	636	0	58895 8.2	547600.6	557465.1	0	2351.9 45	2351.945	2351.945	0	1061.8 66	1409.698	1409.698
10903-I	Puerta de Hierro	823	9934 9	91534	93223	Escazú - Santa Ana	341	50208.0 14	10606 29	1045488	1070131	0	2351.9 45	2351.945	2351.945	0	11784 1.9	10988.63	10988.63
10903-J	Forum	232 3	8057 9	80608	81079	Escazú - Santa Ana	68	8294.73 77	98124 2	978058.7	987923.2	0	2351.9 45	2351.945	2351.945	0	4021.3 22	3965.012	3965.012
10903-K	San Judas	376 9	5595 8	56144	61314	Escazú - Santa Ana	1359	0	63301 7.1	648382.5	665021.8	0	2351.9 45	2351.945	2351.945	0	2811.1 3	2976.134	2976.134
10903-L	Lindora	431 0	6975 0	68566	72101	Escazú - Santa Ana	2009	84016.1 85	90853 8.3	897752	916038.1	0	2351.9 45	2351.945	2351.945	0	2976.1 34	2976.134	3617.18
10903-M	Valle del Sol	53	2917 1	29171	29952	Escazú - Santa Ana	1046	0	20138 2.3	201382.3	201382.3	0	0	0	0	0	1113.2 26	1113.226	1526.268
10903-N	Forum 2	813 1	5679 6	61938	68688	Escazú - Santa Ana	185	0	88464 5.5	897752	901284.7	0	2351.9 45	2351.945	2351.945	0	2976.1 34	2976.134	2976.134
10904-A	Río Oro	159	7704 1	73765	76269	Escazú - Santa Ana	2367	0	92852 4.1	897255.9	935724.5	0	2351.9 45	2351.945	2351.945	0	4021.3 22	3965.012	3965.012
10904-B	Guapinol	781	8148 9	75798	77805	Escazú - Santa Ana	750	0	99172 1.8	925860	957516.8	0	2351.9 45	2351.945	2351.945	413.0417	4369.1 53	3965.012	4190.755

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10904-C	La Hacienda	527	7073 8	75986	78293	Escazú - Santa Ana	1073	7267.59 97	90225 6.2	952806	960305.8	0	2351.9 45	2351.945	2351.945	0	2976.1 34	2976.134	3617.18
10904-D	Río Oro Norte	35	5281 7	66486	67051	Escazú - Santa Ana	1381	2673.33 83	59328 5.8	610382.8	834717	0	2351.9 45	2351.945	2351.945	0	2811.1 3	2811.13	2811.13
10904-E	Hacienda del Sol	0	7221 0	77276	79627	Escazú - Santa Ana	447	0	90950 9.8	961708.6	969208.3	0	2351.9 45	2351.945	2351.945	0	2976.1 34	2976.134	3617.18
10904-F	Berkeley	204	8138 2	75851	83214	Escazú - Santa Ana	423	0	99009 2.5	925860	1019956	0	2351.9 45	2351.945	2351.945	0	4369.1 53	3965.012	4594.896
10904-G	Quebrador	90	5616 3	60308	75857	Escazú - Santa Ana	721	0	88548 1	896848.8	935724.5	0	2351.9 45	2351.945	2351.945	0	2976.1 34	3965.012	3965.012
10904-H	La Chimba	0	5246 5	41617	54087	Escazú - Santa Ana	722	0	63041 4.3	385720	432909.3	0	0	0	0	0	2555.3 15	2555.315	2976.134
10904-I	Barrio España Este	78	2545 2	19440	66641	Escazú - Santa Ana	1139	3532.71 32	37283 0.7	208834.4	888405.4	0	0	0	2351.945	0	2390.3 11	2110.101	3617.18
10905-A	Piedades	619	7255 2	64536	68919	Escazú - Santa Ana	2600	5599.70 8	90008 8.1	894577.6	904509.5	0	2351.9 45	2351.945	2351.945	0	2976.1 34	3965.012	3965.012
10905-B	Caraña	574	7705 9	75368	76269	Escazú - Santa Ana	1859	16049.5 39	93794 5.9	916438.2	935724.5	0	2351.9 45	2351.945	2351.945	0	4021.3 22	3965.012	3965.012
10905-C	Cebadilla	46	6282 6	63724	73920	Escazú - Santa Ana	1576	0	88548 1	885727.2	918606.4	0	2351.9 45	2351.945	2351.945	0	2976.1 34	3617.18	3965.012
10905-D	Barrio España Oeste	0	1734 3	17843	63159	Escazú - Santa Ana	331	0	20014 1.4	208834.4	661393	0	0	0	2351.945	0	1945.0 97	2110.101	3617.18
10905-E	Pabellón	32	194	194	194	Escazú - Santa Ana	95	0	5943.6 72	5943.672	5943.672	0	0	0	0	0	165.00 42	165.0042	165.0042
10905-F	Rincón San Marcos	5	6082 3	54514	63146	Escazú - Santa Ana	1673	6638.73 1	88149 0.5	610694.4	661393	0	2351.9 45	2351.945	2351.945	0	2976.1 34	2555.315	3617.18
10905-G	Fiquitas	709	7257 0	73593	75386	Escazú - Santa Ana	1477	8704.09 45	90950 9.8	909184.6	925860	0	2351.9 45	2351.945	2351.945	340.4941	2976.1 34	3965.012	3965.012
10905-H	Condopark	706 7	3282 1	35558	35841	Escazú - Santa Ana	184	0	34220 9.6	475644.6	519531.4	0	0	2351.945	2351.945	0	2390.3 11	2390.311	2555.315
10906-A	Brasil	838	3290 6	30221	36251	Escazú - Santa Ana	753	564.419 92	36967 4.4	292603.8	522687.7	0	0	0	2351.945	0	2390.3 11	2390.311	2555.315
10906-B	Copey	159 7	2583 6	26635	28511	Escazú - Santa Ana	1590	0	24672 1.6	253667.2	258193.4	0	0	0	0	0	1945.0 97	1945.097	2390.311
10906-C	La Promesa	78	2663 3	28171	28511	Escazú - Santa Ana	1533	407.060 03	24672 1.6	254660.7	258193.4	0	0	0	0	0	1945.0 97	2390.311	2390.311
11001-A	Alajuelita	100 4	9357 0	94131	97394	Hatillo - Alajuelita	3063	7528.86 99	14213 56	1326759	1383808	0	5041.2 08	6153.406	6153.406	0	16634 1.5	165461.4	167538
11001-B	Chorotega	62	7458 5	66302	76568	Hatillo - Alajuelita	3684	4564.47 74	12347 58	1180626	1243419	0	3560.6 1	3560.61	5041.208	0	16671 3.1	165069.7	166308.9
11001-C	Lagunilla	183	8231 8	82655	92454	Hatillo - Alajuelita	2982	1912.05 13	12933 67	1302382	1653968	0	6553.1 35	5041.208	9145.931	0	18443 6.8	166308.9	191905.9
11001-D	La Macha	315	1238 43	89162	97130	Hatillo - Alajuelita	1198	604.379 38	13795 16	1328838	1348955	0	23841. 6	5041.208	24953.79	9864.507	16611 4.9	166506.6	166939.8
11001-E	Madrigal	541	9132 6	95038	96964	Hatillo - Alajuelita	1829	0	12951 79	1342061	1365415	0	5041.2 08	6153.406	6153.406	0	16547 3.8	172650.6	173083.8
11002-A	San Josecito	30	4548 1	35705	36041	Hatillo - Alajuelita	2863	4920.93 98	95209 8.9	929772.3	942424	0	3560.6 1	3560.61	3560.61	0	36925. 83	36925.83	37793.58
11002-B	El Alto	91	3339 2	27731	28416	Hatillo - Alajuelita	2974	0	85815 0.4	737360.2	763342.2	0	3560.6 1	3560.61	3560.61	0	36925. 83	34430.88	36925.83

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11002-C	Los Filtros	0	2749 5	25727	26546	Hatillo - Alajuelita	1299	0	74799 6.2	719379	743019.6	0	0	3560.61	3560.61	0	40252. 43	39667.02	39667.02
11002-D	Lámparas Norte	0	1385 3	9728	14138	San Sebastián - Paso Ancho	108	0	19052 1.7	139676.7	202518.1	0	3560.6 1	3560.61	3560.61	0	21700. 29	20316.07	21700.29
11002-E	Calle Cochea	0	3123 9	28713	29573	Hatillo - Alajuelita	1775	0	81604 0.1	770121.1	784723.4	0	3560.6 1	3560.61	3560.61	0	36925. 83	36925.83	43463.31
11002-F	Aguilar Machado	62	6815 9	55501	57815	Hatillo - Alajuelita	1412	0	11250 63	1024097	1124600	0	3560.6 1	3560.61	3560.61	0	16634 1.5	57990.68	57990.68
11003-A	San Antonio	46	9574	8845	9876	Hatillo - Alajuelita	2108	0	42505 9.4	398149.7	411499.5	0	0	0	0	0	21279. 74	21054	21279.74
11003-B	El Llano	128	9241	3632	3926	Hatillo - Alajuelita	425	0	40529 9.5	338877	346040.8	0	0	0	0	0	21279. 74	11571.84	11571.84
11003-C	Cascabela	72	1160 4	18612	19535	Hatillo - Alajuelita	954	0	47581 8.8	431415.6	455343.3	0	0	0	0	0	21921. 74	21921.74	27591.48
11003-D	Caracas	64	2752	2553	3458	Hatillo - Alajuelita	226	0	33559. 1	22566.03	41250.04	0	0	0	0	0	10732. 25	9864.507	16401.98
11003-E	Piedra de Fuego	0	1403 9	20189	21029	Hatillo - Alajuelita	17	0	50280 6.9	453492.6	473488.8	0	0	0	0	0	27591. 48	27591.48	27591.48
11003-F	Lámparas Sur	58	2138 3	13866	22101	San Sebastián - Paso Ancho	1223	0	24039 5.5	192404.3	266089.3	0	3560.6 1	3560.61	6553.135	0	22656. 13	21700.29	40379.88
11003-G	Corazó de Jesús	0	1110	3609	4060	San Sebastián - Paso Ancho	114	0	15940. 43	42928.6	50879.59	0	0	0	0	0	867.74 33	6537.478	6537.478
11004-A	Concepción	143	9566 4	99806	114516	San Sebastián - Paso Ancho	2704	5179.22 18	16372 32	1659047	1806774	0	7665.3 34	7665.334	48574.6	1047.612	20476 4.8	205198	239746.8
11004-B	Los Itabos	84	1053 15	105013	118278	San Sebastián - Paso Ancho	856	1252.58 08	17394 38	1772009	1862310	0	12929. 9	12929.9	57805.8	0	20519 8	199528.3	239746.8
11004-C	Once de Abril	6	8670 2	80328	101505	San Sebastián - Paso Ancho	3136	1396.33 75	15846 29	1558901	1693800	0	7665.3 34	7665.334	15476.15	0	20476 4.8	199095.1	199528.3
11004-D	Monte Alto	8	5773 0	76305	98115	San Sebastián - Paso Ancho	1324	0	10079 31	1426996	1589474	0	6553.1 35	7665.334	15476.15	0	71503. 73	191985.4	204482.1
11004-E	Chirivico	103	1154 55	106157	119303	San Sebastián - Paso Ancho	3204	0	17327 82	1720108	1855509	0	40741. 64	12929.9	57805.8	0	23903 0.9	204482.1	239030.9
11004-F	El Progreso	0	7074 6	66026	79947	San Sebastián - Paso Ancho	1922	2125.64 88	11079 04	1057332	1503315	0	6553.1 35	6553.135	7665.334	0	79376. 98	71503.73	83605.2
11004-G	Los Almendros	0	5838 2	65688	86782	San Sebastián - Paso Ancho	455	0	10459 88	1057523	1512458	0	6553.1 35	6553.135	7665.334	0	71503. 73	71503.73	190466
11004-H	Boca del Monte	483	8497 8	66417	94577	San Sebastián - Paso Ancho	2043	1447.52 28	14571 45	1168199	1498887	0	7665.3 34	6553.135	7665.334	0	20142 3.1	71721.91	81342.51
11004-I	Las Fuentes	0	4941 6	39936	76578	San Sebastián - Paso Ancho	963	0	75645 1	609947.5	1134838	0	6553.1 35	6553.135	6553.135	0	51715. 53	52323.96	53847.27
11005-A	San Felipe	126	1056 95	78938	84360	Hatillo - Alajuelita	3440	9573.21 15	13827 76	1152472	1169582	0	22361	5041.208	6153.406	0	16611 4.9	166114.9	166114.9
11005-B	Esquipulas	0	4938 2	46527	46740	Hatillo - Alajuelita	3465	0	96110 8.3	951584.3	973199.3	0	3560.6 1	3560.61	3560.61	0	37329. 98	36925.83	36925.83
11005-C	Tejarcillos	0	4536 7	35376	35376	Hatillo - Alajuelita	3708	282945. 05	91136 2	887562	887562	0	0	0	0	0	35060. 77	35297.67	35297.67
11005-D	La Verbena	27	4752 6	50150	50214	Hatillo - Alajuelita	6305	6902.69 44	93298 5.4	946062.6	946062.6	0	0	3560.61	3560.61	433.9774	35060. 77	35297.67	35297.67
11005-E	Terra Verbena	783 3	7465 1	46128	46128	Hatillo - Alajuelita	448	0	13086 79	1001072	1001072	0	18800. 39	0	0	0	35476. 07	35476.07	35476.07

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11005-F	Tiribí	48	7409 2	40354	40354	Hatillo - Alajuelita	2038	1676.09 86	12822 05	1006669	1006669	0	18800. 39	0	0	0	35476. 07	35476.07	35476.07
11005-G	Corina Rodríguez	271	6956 1	36465	36465	Hatillo - Alajuelita	4680	9694.91 15	11921 87	899235	899235	0	31911. 61	13111.22	13111.22	715.9286	27050. 9	27172.99	27172.99
11005-H	La Guardia	79	7596 9	37074	38955	Hatillo - Alajuelita	1325	960.715 51	12622 52	931397.4	931397.4	0	31911. 61	13111.22	13111.22	0	34821. 29	34522.56	34522.56
11005-I	Los Pinos	95	9273 2	73091	74478	Hatillo - Alajuelita	1989	4593.49 68	12277 51	1194272	1196282	0	31911. 61	31911.61	31911.61	0	14181 5.8	34213.28	34213.28
11005-J	La Aurora	254	8791 3	64381	69819	Hatillo - Alajuelita	6503	16429.5 07	12668 89	1177798	1194391	0	31911. 61	13111.22	31911.61	0	14129 2.3	27398.73	27398.73
11005-K	Bellotas	0	8873 1	75709	77050	Hatillo - Alajuelita	2323	18405.6 84	12092 29	1176423	1190294	0	31911. 61	18800.39	31911.61	0	14129 2.3	34213.28	34213.28
11101-A	Coronado	193 1	8108 6	80167	79840	Guadalupe - Coronado	4512	10355.6 38	13018 39	1318688	1308669	0	83063 2.4	830632.4	830632.4	0	66856. 75	66967.66	66856.75
11101-B	Clínica	177 5	1018 60	104066	104066	Guadalupe - Coronado	2926	48820.0 63	14049 26	1473350	1473350	0	10124 96	1031241	1031241	24316.92	66856. 75	66856.75	66856.75
11101-C	Los Cedros	117	4416 2	52028	52028	Guadalupe - Coronado	3750	41886.3 19	91791 4.3	1009596	1009596	0	68170. 5	68170.5	68170.5	0	65933. 95	66367.13	66367.13
11101-D	Mercedes	257	3275 8	33648	33648	Guadalupe - Coronado	2329	11144.8 99	80105 8.3	856905.3	856905.3	0	38973. 99	38973.99	38973.99	0	29105. 03	29105.03	29105.03
11101-E	San Francisco	132	2949 4	30460	30460	Guadalupe - Coronado	3086	11059.8 39	70085 1.2	704175.5	704175.5	0	38973. 99	38973.99	38973.99	0	29611. 71	29611.71	29611.71
11101-F	Durazno	0	1504 9	15286	15286	Guadalupe - Coronado	478	13030.7 2	50110 6.7	502671.7	502671.7	0	0	0	0	0	26526. 71	26826.65	26826.65
11101-G	Los Alpes	0	1017 3	7896	7896	Guadalupe - Coronado	491	0	32790 6	271047.1	271047.1	0	0	0	0	0	25328. 28	1011.357	1011.357
11102-A	San Rafael	28	1241 6	13220	13220	Guadalupe - Coronado	1088	0	39540 2	376334.4	376334.4	0	0	0	0	0	25139. 06	25386.81	25386.81
11102-B	La I Griega	20	2988 3	29945	29945	Guadalupe - Coronado	495	0	69010 2.8	694509.6	694509.6	0	38973. 99	38973.99	38973.99	0	28221. 08	28221.08	28221.08
11102-C	La Máquina	0	1532 7	12885	12885	Guadalupe - Coronado	1984	4032.26 61	42274 3	400892.9	400892.9	0	38973. 99	0	0	0	25139. 06	25139.06	25139.06
11102-D	Patio de Agua	64	2752	268	268	Guadalupe - Coronado	1351	1186.30 24	11296 2.9	5218.569	5218.569	0	0	0	0	0	0	0	0
11102-E	Loma Bonita	176	8059	7748	7748	Guadalupe - Coronado	893	0	26489 3.8	259678.4	259678.4	0	0	0	0	0	24316. 92	24564.66	24564.66
11102-F	La Unión	32	2876	4448	4448	Guadalupe - Coronado	1257	20015.5 96	14221 9.1	153733.1	153733.1	0	0	0	0	0	0	247.7453	247.7453
11102-G	Las Nubes	62	1098	3423	3423	Guadalupe - Coronado	939	4406.79 08	29216. 19	51513	51513	0	0	0	0	0	247.74 53	247.7453	247.7453
11103-A	Dulce Nombre Oeste	27	6434 2	74341	74341	Moravia - Paracito	4059	14899.2 87	10530 92	1077885	1077885	0	14351 7.1	154764.7	154764.7	0	66308. 98	66308.98	66308.98
11103-B	Dulce Nombre Este	772	8389 6	85025	85025	Moravia - Paracito	2253	10752.4 79	12233 10	1256249	1256249	0	83844 3.2	847674.5	847674.5	0	66308. 98	66308.98	66308.98
11103-C	El Carmen	117	5650 0	57595	57268	Guadalupe - Coronado	1572	796.270 79	10190 98	1030453	1020434	0	68170. 5	84882.7	84882.7	0	65708. 45	65819.36	65708.45
11103-D	La Gallera	106 7	2950 2	29018	28954	Moravia - Paracito	2274	4788.31 6	58032 3.3	560043.5	560043.5	0	38973. 99	38973.99	38973.99	0	27528. 35	26644.4	26644.4
11103-E	El Rodeo Oeste	32	1220 4	12073	12073	Guadalupe - Coronado	602	17473.1 75	32303 3	331071.9	331071.9	0	0	0	0	0	24839. 12	24839.12	24839.12

Code	Name	Jobs	Jobs accessibility			Transit zone	Populati on	Recreati on square meters	Recreation accessibility			Universities square meters	Universities accessibility			Healthcare square meters	Healthcare accessibility		
			Radia l	Trunk- feeder	T-f improved				Radial	Trunk- feeder	T-f improved		Radial	Trunk- feeder	T-f improved		Radial	Trunk- feeder	T-f improved
11103-F	Sacramento	0	0	730	730	Guadalupe - Coronado	200	0	0	5105.857	5105.857	0	0	0	0	0	0	151.9885	151.9885
11104-A	San Antonio	658	1405 62	139735	140486	Moravia - Paracito	3191	12101.4 11	16654 66	1639165	1642191	0	12060 12	1206012	1206012	0	19487 8.1	199212	199212
11104-B	Los Ángeles	81	1546 85	155753	155336	Moravia - Paracito	2765	6440.51 08	17791 49	1771789	1771115	0	12087 46	1208746	1208746	0	19998 5.6	199985.6	199985.6
11104-C	Río Alto	112 3	1099 96	111199	110872	Moravia - Paracito	2356	6529.17 94	14900 87	1522097	1512078	0	10312 41	1043841	1043841	0	67784. 25	67784.25	67673.35
11104-D	Santa Marta	261	1375 76	139911	140662	Moravia - Paracito	3154	3929.26 92	16114 57	1642619	1645646	0	12060 12	1206012	1206012	0	19487 8.1	199212	199212
11104-E	El Trapiche	30	8100 3	83865	83538	Moravia - Paracito	1841	4833.84 83	12117 84	1276465	1266446	0	48465 4.4	838443.2	838443.2	0	66198. 08	66308.98	66198.08
11104-F	Lotes Sinaí	108	9790 5	99175	99156	Moravia - Paracito	1750	0	13085 81	1343205	1333186	0	86027 4.7	860274.7	860274.7	0	66308. 98	66967.66	66856.75
11104-G	Romilios	2	5521 1	55046	55046	Moravia - Paracito	5030	18190.9 13	81009 3.6	922115.4	922115.4	0	77755. 49	77755.49	77755.49	0	64131. 77	64510.03	64510.03
11105-A	Cascajal	800	894	1098	1098	Guadalupe - Coronado	680	761.538 63	25183. 93	25183.93	25183.93	0	0	0	0	247.7453	247.74 53	247.7453	247.7453
11105-B	San Pedro	42	1386 4	13059	13059	Guadalupe - Coronado	4999	43561.1 88	38930 3.5	373203.1	373203.1	0	0	0	0	0	25139. 06	24839.12	24839.12
11105-C	La Colmena	0	8418	6188	6188	Guadalupe - Coronado	1036	26154 6.6	201898.7	201898.7	0	0	0	0	0	0	24316. 92	24316.92	24316.92
11105-D	El Rodeo Este	0	1310 9	13146	13146	Guadalupe - Coronado	1059	3454.26 49	36942 2.6	378507.5	378507.5	0	0	0	0	0	24839. 12	24839.12	24839.12
11301-A	Tibás	187 0	3344 29	317517	321853	Tibás - Santo Domingo	5117	7789.61 32	34950 11	2705330	2774531	0	95741 1.1	906773.8	906773.8	0	58492 2	582797.2	587123.6
11301-B	Las Rosas	166 5	2993 87	289234	291502	Tibás - Santo Domingo	2249	26228.0 34	27159 15	1960555	2002275	0	62081 6.2	657056.6	657056.6	0	57921 3.9	579516.3	583273.9
11301-C	González Truque	206 2	4020 78	363726	368346	Tibás - Santo Domingo	1788	3085.73 37	43344 67	3970397	4136054	0	16392 47	1035785	1036513	0	61574 5.1	614300.3	618929.2
11301-D	El Valle	579	3011 05	299540	307276	Tibás - Santo Domingo	2309	1699.27 28	32493 71	2234672	2606331	0	89338 6.9	893386.9	893386.9	0	47704 6.6	476859.7	478897.9
11301-E	Versalles	151 9	2191 24	255615	266458	Tibás - Santo Domingo	552	23683.6 5	17058 74	1692642	1751411	0	30031 8.5	310684.4	398810.9	10138.57	21130 9.5	474208	474546.9
11301-F	Linda Vista	0	2947 37	289166	291649	Tibás - Santo Domingo	1816	0	30937 86	2031124	2328314	0	71316 0.1	659790.2	659790.2	0	47397 8	473978	474546.9
11301-G	Jesús Jiménez	56	2426 12	229136	236506	Tibás - Santo Domingo	2120	14645.4 2	17136 35	1621474	1723741	0	43158 6.1	467349.7	470560.1	0	21074 0.6	204008	210740.6
11301-H	San Jerónimo	21	2668 68	261226	268016	Tibás - Santo Domingo	1054	0	26678 28	1898414	1949661	0	61858 8.9	470560.1	470560.1	0	31560 6	315976.5	319734
11301-I	Villafranca	0	1778 27	176676	184481	Tibás - Santo Domingo	2063	2004.19 8	12635 23	1257494	1387973	0	26136 3	287316.2	287316.2	0	20708 1.7	200349.1	207081.7
11301-J	La Florida Sur	818	2232 01	257053	284594	Tibás - Santo Domingo	1924	0	18962 04	1975400	2130461	0	10641 62	1038911	1135176	0	21265 9.9	499875.3	500214.2
11301-K	La Florida Norte	0	1841 61	182278	189177	Tibás - Santo Domingo	4500	11729.0 09	13900 90	1401934	1487544	0	48630 6.6	670575.8	677703	0	20651 2.8	186068.2	208093.2
11301-L	Virginia	882	1603 01	158619	177696	Tibás - Santo Domingo	840	0	13215 70	1478175	1604167	0	56604 6.9	936497.6	940011.1	0	18581 2.1	210281	210849.9
11302-A	Cinco Esquinas	358	3606 27	343404	351285	Tibás - Santo Domingo	2062	6226.05 72	43280 43	3685142	3833459	0	10325 08	1018828	1018828	4333.839	50953 3	489796	495541.8

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			Radial	Trunk- feeder	T-f improved				Radial	Trunk- feeder	T-f improved		Radial	Trunk- feeder	T-f improved		Radial	Trunk- feeder	T-f improved
11302-B	Bajo Piuses	308	4266 23	403890	411580	Tibás - Santo Domingo	843	0	50211 10	4863215	4952959	0	16482 78	1639247	1639247	0	64954 3.5	643309.3	648292.3
11302-C	Caribeños	48	4199 15	399305	402525	Tibás - Santo Domingo	361	5178.00 45	52892 66	4647014	4704487	0	16392 47	1639247	1639247	0	54387 5.7	513037.5	518399.9
11302-D	Copey	965	3503 76	315227	339847	Tibás - Santo Domingo	2528	6069.12 06	38730 18	3688395	3799783	0	92146 7.2	595561.1	834303.5	0	49425 4.6	485440.5	493440.4
11303-A	Llorente	966	3113 49	300784	319408	Tibás - Santo Domingo	1331	18598.5 35	32580 46	2603687	3347775	0	85491 7.9	839924.4	927012.2	0	49033 3.4	488697.6	489036.5
11303-B	Monterreal	61	2168 84	240312	270658	Tibás - Santo Domingo	1323	1681.71 47	24442 05	1801667	1934195	12600.24	69070 5.3	690705.3	703298.6	0	21163 0.1	474989.5	475558.4
11303-C	UNIBE	466	2700 91	284268	296265	Tibás - Santo Domingo	741	0	28968 32	2146982	2637637	16712.21	11940 14	1185902	1204380	0	47758 5.6	500395.8	500872.9
11303-D	Jardines	871	2066 94	201179	268581	Tibás - Santo Domingo	2354	23069.2	17179 29	1642468	1949752	0	69070 5.3	680913.3	701071.2	0	21250 7.9	236637.9	500214.2
11303-E	Vergel	122	2725 37	278823	293924	Tibás - Santo Domingo	1399	5644.70 46	30217 64	2256989	2403083	0	61689 5.1	659790.2	659790.2	0	47623 5.2	473639.1	477547.5
11303-F	Dalia	90	3043 00	282679	298047	Tibás - Santo Domingo	1162	0	31166 22	2252252	2372083	0	92176 7.2	761153.2	761153.2	0	47885 8.1	474069.8	477022.4
11303-G	Santa Mónica	174	3413 73	333119	337119	Tibás - Santo Domingo	1866	3346.40 65	36147 17	3530106	3595084	0	96453 8.3	986187.7	999298.9	0	49163 2.2	594291.1	598956.4
11304-A	León XIII	37	2449 41	223842	260005	Uruca - Heredia Sur	3329	6419.49 37	26307 39	1785816	2030440	0	22757 3.8	225540.9	319576.7	0	46208 5.2	446987.7	458210.6
11304-B	Garabito	0	2390 49	216870	272707	Uruca - Heredia Sur	7271	2027.94 78	25559 30	1761515	2082911	0	22554 0.9	207594.7	545207.8	0	46164 2.2	452645.2	458159.1
11304-C	Hogares Crea	322	2766 38	256763	276934	Uruca - Heredia Sur	2748	3121.50 73	27860 36	2021465	2142913	0	34756 2.9	319576.7	545207.8	0	46995 8.5	454110.1	459249.4
11304-D	Doña Fabiola Sur	48	3252 98	285334	314656	Uruca - Heredia Sur	2479	4718.72 76	34374 72	2326219	3121752	0	77319 9.2	544834.4	770465.5	260.4639	58363 2	475009	480301.2
11304-E	Doña Fabiola Norte	0	2925 17	277399	296682	Uruca - Heredia Sur	1426	2918.25 5	30769 19	2164479	2319831	0	54756 8	360565.2	586196.4	0	57987 4.5	466438.7	470893.3
11305-A	Colima	313	3377 25	311372	318442	Tibás - Santo Domingo	2347	8408.66 98	34978 74	2511644	2751076	0	10254 99	967461.9	967461.9	0	58741 0.6	584109.1	584448
11305-B	La Balsa	615 0	3114 30	297737	304233	Tibás - Santo Domingo	414	0	29072 26	2062936	2148549	0	88279 3.2	928487.9	928487.9	0	58481 4.5	583063.2	583365.7
11305-C	Manolo Rodríguez	158 0	3548 24	331587	344270	Tibás - Santo Domingo	3845	692.959 63	42139 03	3978160	4054548	0	88416 2.9	873965.5	887076.7	0	59549 1.5	593765.5	598485.5
11305-D	ICE	933 2	2053 30	200432	208205	Tibás - Santo Domingo	502	0	16169 75	1515751	1671062	0	21540 5.5	171551.4	225540.9	0	45262 7.1	450665.5	456041.6
11305-E	Almendros	130	3193 43	303657	309761	Tibás - Santo Domingo	3549	2613.66 47	33894 03	2210676	2640404	0	88352 1.5	794551.5	794551.5	0	58105 7	579608.1	584058.6
11305-F	Cuatro Reinas Este	24	2961 10	276395	288932	Tibás - Santo Domingo	1436	26351.7 62	20375 75	1864110	2024105	0	72217 9.2	668809.4	669537.7	0	57960 8.1	572541.5	577008.4
11305-G	Cuatro Reinas Oeste	7	2947 35	288439	299235	Tibás - Santo Domingo	2600	0	25582 63	2097818	2547994	0	57504 7.1	595561.1	595561.1	0	57917 7.4	579608.1	584058.6
11305-H	Las Reinas	0	2739 82	256922	268262	Tibás - Santo Domingo	503	0	19062 38	1560409	1698815	0	62081 6.2	430603.1	430603.1	0	57850 4.5	457115.7	457825
11401-A	Moravia	231 8	2260 64	221649	227231	Moravia - Paracito	3341	13837.4 3	23542 03	2309619	2936151	0	13349 88	1334988	1334988	867.8333	23887 9.5	232485.8	238879.5
11401-B	Guaria Oriental	284	2271 72	226265	230525	Moravia - Paracito	1005	0	24084 37	2895916	2933321	0	13349 88	1334988	1334988	0	23847 3.4	233344.1	240370.4

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			Radial	Trunk- feeder	T-f improved				Radial	Trunk- feeder	T-f improved		Radial	Trunk- feeder	T-f improved		Radial	Trunk- feeder	T-f improved
11401-C	Santa Clara	357	1475 00	148555	149890	Moravia - Paracito	1335	1653.00 67	18128 50	1843560	2232779	38973.99	12177 77	1278465	1278465	0	20021 5.8	200215.8	200104.9
11401-D	Los Girasoles	168	1518 47	160001	173601	Moravia - Paracito	1242	0	19003 75	1965701	2355853	0	12177 77	1278465	1278465	0	20021 5.8	200215.8	200215.8
11401-E	Jardines	340	1379 10	140335	140350	Moravia - Paracito	1971	13961.2 95	17087 79	1728963	1731989	0	12150 43	1215043	1215043	0	19959 3.9	199824.1	199824.1
11401-F	San Blas	346	1963 14	184649	189551	Moravia - Paracito	1134	0	20198 13	1960121	1988355	0	12949 39	1279946	1279946	0	23063 3	228923.7	229153.9
11401-G	San Rafael	689	1847 97	179439	184300	Moravia - Paracito	2437	34375.3 22	18436 86	1820958	1831998	0	12087 46	1208746	1219258	0	22869 5	208894.7	207749.5
11401-H	Corazón de Jesús	24	1530 80	150771	164296	Moravia - Paracito	1621	0	15351 00	1583611	1592732	0	11962 20	1196220	1196220	0	19238 2.5	190648.3	192904.7
11401-I	Los Robles	359	2183 80	206542	211760	Moravia - Paracito	979	0	21642 35	2075728	2107150	0	13349 88	1332740	1334221	0	23199 6.7	230540.1	230659.3
11401-J	La Guaria	635	1830 20	176689	178529	Moravia - Paracito	1465	36924.0 84	18130 96	1861612	1833833	0	12694 34	1208746	1208746	0	22984 8.6	200910.5	200910.5
11401-K	Americano	365	1992 86	192188	193309	Moravia - Paracito	771	0	20452 20	1970693	1986086	0	12949 39	1279946	1279946	0	23037 4.1	228923.7	229043
11401-L	San Martín	141	1944 88	179361	183645	Guadalupe - Coronado	1859	26604.9 6	18667 02	1779970	1781907	0	13219 51	1244789	1246270	0	23152 7.6	229848.6	229848.6
11401-M	La Alondra	57	1988 03	180842	190002	Guadalupe - Coronado	985	1798.24 76	17028 42	1426929	1527913	0	12604 96	980492.5	1064162	0	23540 8.7	193105.4	207372.3
11401-N	Los Colegios	564	1901 95	174758	191622	Guadalupe - Coronado	1244	11868.1 92	18103 82	1666727	1703364	0	12462 70	1244789	1246270	0	22984 8.6	200093.9	222197.8
11401-O	Lincoln	110 9	1983 03	202613	207608	Guadalupe - Coronado	274	63864.9 69	18110 45	1940751	1982583	0	12604 96	1344166	1344166	0	22167 5.6	222640.8	223209.7
11401-P	Colegios Norte	114	1956 58	194018	200122	Moravia - Paracito	1600	11171.9 74	16800 99	1775382	1869200	0	12577 63	1256282	1257763	0	22119 7.9	221824.2	223548.6
11401-Q	Bajo Varelas	0	1014 59	101523	110833	Moravia - Paracito	1734	3071.31 38	10666 22	1170533	1232968	0	17659 6.1	111978.7	111978.7	0	80566. 91	80520.21	82353.59
11401-R	La Isla	0	1187 94	120815	123729	Moravia - Paracito	1863	0	12817 57	1361319	1373887	0	91574 0	888260.9	888260.9	0	75983. 96	76617.07	76506.16
11401-S	Barro de Olla	304	1397 42	139009	143233	Moravia - Paracito	2540	1849.97 95	14392 24	1555720	1553939	0	12060 12	1185498	1185498	0	19438 9	91702.28	198670.4
11402-A	San Jerónimo	327	2315 4	16932	24789	Moravia - Paracito	1302	10019.0 75	28645 4	215343.8	372923.8	0	0	0	38973.99	110.9062	2374.1 83	2074.241	3258.127
11402-B	Calle Méndez	64	1585 1	11575	17777	Moravia - Paracito	546	0	17635 3.9	144662.2	187293.1	0	0	0	0	0	2074.2 41	2038.516	2413.128
11402-C	Tornillal	192	3103	2749	5529	Moravia - Paracito	237	0	80745. 05	74609.14	115922.3	0	0	0	0	0	831.79 46	831.7946	1699.628
11402-D	La Torre	0	2526	2746	2749	Moravia - Paracito	613	0	69189. 03	39667.16	74609.14	0	0	0	0	0	262.89 47	831.7946	831.7946
11402-E	B San José	0	1192 6	13356	13356	Moravia - Paracito	587	0	16640 2.9	224004.8	224004.8	0	0	0	0	0	1505.3 41	1505.341	1505.341
11402-F	Platanares	0	2596 1	26208	26208	Moravia - Paracito	1257	0	45194 0.4	454289.2	454289.2	0	38973. 99	38973.99	38973.99	0	2689.2 27	3258.127	3258.127
11402-G	Manantial	240	2925 0	24961	26184	Moravia - Paracito	3031	0	49282 8.6	379252.2	454289.2	0	38973. 99	38973.99	38973.99	0	2689.2 27	3258.127	3258.127
11403-A	La Trinidad	14	1433 00	143988	145839	Moravia - Paracito	1623	3185.93 01	14920 65	1693394	1699483	0	12060 12	1208746	1208746	0	19911 4.6	199985.6	199985.6

Code	Name	Jobs	Jobs accessibility			Transit zone	Populati on	Recreati on square meters	Recreation accessibility			Universities square meters	Universities accessibility			Healthcare square meters	Healthcare accessibility		
			Radial	Trunk- feeder	T-f improved				Radial	Trunk- feeder	T-f improved		Radial	Trunk- feeder	T-f improved		Radial	Trunk- feeder	T-f improved
11403-B	Las Rosas	0	1398 30	133243	137794	Moravia - Paracito	1451	10237.9 99	14380 66	1548469	1556707	0	11854 98	1206012	1206012	0	19395 8.3	92132.99	199212
11403-C	San Antonio Norte	0	1148 56	116740	119538	Moravia - Paracito	1298	5888.31 47	14421 71	1481725	1472558	0	88826 0.9	1053633	1053633	0	66967. 66	77106.23	76995.32
11403-D	El Moral	8	8153 6	73632	73440	Moravia - Paracito	2657	6135.91 27	97957 7.2	903012.8	903012.8	0	66340 5.3	300385.2	300385.2	0	65819. 83	65819.83	65819.83
11403-E	El Ruano	0	9376 4	97216	96889	Moravia - Paracito	385	0	11121 58	1157516	1147497	0	90635 0.1	860274.7	860274.7	0	65297. 63	65819.83	65708.92
11403-F	Los Piratas	8	3961 7	44183	46520	Moravia - Paracito	1732	0	55765 8.1	592602	649994.7	0	72313. 77	68286.43	68286.43	0	4265.9 34	2578.321	12716.89
11403-G	Los Sitios	42	4925 3	51576	51576	Moravia - Paracito	2316	6448.26 56	61852 1.1	748463	748463	0	11441 3.2	77755.49	77755.49	0	40380. 18	64697.1	64697.1
11403-H	El Encanto	0	2507 4	29080	28753	Moravia - Paracito	991	0	36806 7.5	496545.9	486526.9	0	38973. 99	38973.99	38973.99	0	2689.2 27	2689.227	2578.321
11403-I	San Francisco	0	1037 65	130614	130614	Moravia - Paracito	1876	1474.38 48	12376 05	1523045	1523045	0	88622 7.9	1185498	1185498	0	75958. 39	86551.85	86551.85
11403-J	El Fortín	3	5956 8	71298	71298	Moravia - Paracito	2762	24703.9 73	76523 8.5	873279.3	873279.3	0	84882. 7	300385.2	300385.2	0	64099. 2	65297.63	65297.63
11403-K	Alto La Trinidad	117	8773 4	107062	107062	Moravia - Paracito	3132	7129.13 63	11219 60	1282102	1282102	0	86027 4.7	888260.9	888260.9	0	65819. 83	67047.4	67047.4
11403-L	Villa Fabiola	0	5998 6	85323	85323	Moravia - Paracito	1472	4910.60 05	93682 8	1225251	1225251	0	13825 2.6	847674.5	847674.5	0	65819. 83	66308.98	66308.98
11403-M	Virilla	662	7295 8	97203	97203	Moravia - Paracito	1842	0	89278 5.1	1210938	1210938	0	47737 3.5	860274.7	860274.7	0	65190. 3	67047.4	67047.4
11501-A	San Pedro	342 7	3313 35	292706	306461	San Pedro - Curridabat - Tres Ríos	713	18939.0 94	55489 55	5149547	5869511	25953.23	15691 92	1526914	1526914	0	26737 7.5	265881.8	275589.7
11501-B	Azáleas	200 5	2816 68	268744	276076	San Pedro - Curridabat - Tres Ríos	858	1226.11 54	50576 57	4813696	4484192	3210.377	14410 15	1441015	1441015	0	26642 1.6	240263.5	240544.7
11501-C	UCR Sur	806	2728 83	254360	260962	San Pedro - Curridabat - Tres Ríos	130	29443.5 74	37528 82	3887582	3922589	184269.2	14380 23	1438023	1438023	0	24430 3	244607.5	244852.2
11501-D	Roosevelt	400	2579 09	247243	249471	San Pedro - Curridabat - Tres Ríos	1192	7497.42 91	34098 23	4243297	4254574	2733.661	14380 23	1441015	1441015	0	21901 5.9	237979.3	237979.3
11501-E	La Granja	120	2357 14	223871	227398	San Pedro - Curridabat - Tres Ríos	602	6206.56 98	31992 67	3460207	3476764	0	14380 23	1425423	1425423	0	20693 3.4	202462.5	201803.8
11501-F	Barrio Pinto	66	2240 84	204637	222703	San Pedro - Curridabat - Tres Ríos	1559	20841.6 25	33988 49	3460050	3488699	0	13712 48	1335205	1336686	0	22548 6.9	219743.4	226137.1
11501-G	Los Yoses Este	201 1	2640 61	248548	257077	Central	690	9879.28 68	36639 04	3324045	3403541	0	14380 23	1438023	1438023	2256.446	22224 0.4	219827.9	220486.6
11501-H	Los Yoses Oeste	701	2738 92	258562	267419	Central	650	2446.33 86	44506 56	3519506	3644569	0	15269 14	1441015	1441015	0	23938 2.6	236082.3	245790.2
11501-I	Mall San Pedro	182 9	3030 19	279815	294582	Central	194	16451.6 46	47415 16	4313776	4425914	2032.978	15588 26	1526914	1526914	0	26554 8.4	264467.6	274436.2
11501-J	Dent	715	2507 56	241752	250672	Central	742	26421.4 87	34697 93	3336830	3381505	0	14380 23	1438023	1438023	0	24176 3.9	240111.6	242364
11501-K	Sapriisa	293	2462 14	229224	232471	San Pedro - Curridabat - Tres Ríos	438	0	39039 36	3625188	3639382	0	14380 23	1436542	1438023	0	24369 3.2	227453.6	227453.6
11501-L	Ciudad de la Investigación Sur	721	1794 57	163363	164883	San Pedro - Curridabat - Tres Ríos	486	0	23923 30	2257123	2309239	131865.4	13711 86	1352951	1352951	0	19940 4.8	169223.5	172762.9
11501-M	Ciudad de la Investigación Norte	368	1791 18	155455	162703	San Pedro - Curridabat - Tres Ríos	806	0	24812 22	2385145	2404408	124890.6	13711 86	1352951	1352951	0	22287 0.3	57810.68	279788.6

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			Radia l	Trunk- feeder	T-f improved				Radial	Trunk- feeder	T-f improved		Radial	Trunk- feeder	T-f improved		Radial	Trunk- feeder	T-f improved
11501-N	Carmirol	253	1938 42	167376	173276	San Pedro - Curridabat - Tres Ríos	807	6728.60 62	26697 12	2459305	2602094	0	13711 86	1352951	1352951	0	32959 9	295714.1	309056.4
11501-O	Kezia	213	1502 76	130010	140270	San Pedro - Curridabat - Tres Ríos	1501	10250.6 52	20585 67	2115174	2158295	0	12901 19	1268151	1271884	816.5931	16326 5.9	55709.19	162734.9
11501-P	Laboratorio	0	1576 88	112564	125199	San Pedro - Curridabat - Tres Ríos	0	1151.95 54	21726 72	1784910	1848630	0	13711 86	1268151	1268151	0	27087 5	155056.1	162734.9
11501-Q	Carkena	3	1833 78	151414	161028	San Pedro - Curridabat - Tres Ríos	678	0	24640 66	2181336	2349807	0	13711 86	1352951	1352951	0	19910 7.9	56770.28	168926.5
11501-R	Vargas Araya	262	1985 10	141240	152191	San Pedro - Curridabat - Tres Ríos	2093	3641.63 76	25370 65	1995697	2033324	0	14072 30	1352951	1352951	0	30663 9	163796	270875
11501-S	Cedral	94	1788 60	140859	150323	San Pedro - Curridabat - Tres Ríos	970	11921.7 96	23643 81	1985187	2014463	0	13711 86	1352951	1352951	0	30448 8.9	163796	270875
11501-T	Vargas Araya	322	2254 03	185495	200417	San Pedro - Curridabat - Tres Ríos	1578	2492.03 01	32963 40	2621527	2671785	0	14254 23	1371186	1372667	0	31555 7.6	179769.7	179769.7
11501-U	Lourdes Norte	188	2411 19	225699	228005	San Pedro - Curridabat - Tres Ríos	1247	1157.55 74	34820 73	3648918	3229645	20514.05	14380 23	1438023	1438023	430.7089	31581 6.2	202078.1	201683.8
11501-V	Lourdes Sur	815	2504 25	237780	250315	San Pedro - Curridabat - Tres Ríos	874	5120.38 05	41426 14	3863972	3894280	27479.07	14380 23	1438023	1438023	0	35161 9.8	203589.5	209983.2
11501-W	Santa Marta Oeste	807	2123 09	198246	203269	San Pedro - Curridabat - Tres Ríos	2004	5095.61 91	26703 44	2549709	2558737	60688.16	13682 56	1371186	1372667	0	30796 3.6	200258.1	201617.1
11501-X	Santa Marta Este	440	1908 22	157217	161932	San Pedro - Curridabat - Tres Ríos	1344	3969.15 82	25684 81	2148614	2264982	4005.174	13682 56	1332212	1332212	0	30796 3.6	175102.6	282520.1
11501-Y	San Gerardo	23	1958 45	199696	201093	San Pedro - Curridabat - Tres Ríos	1341	0	34376 70	3460515	3902248	0	13366 86	1335205	1335205	0	22415 3.6	224436.3	224436.3
11502-A	Sabanilla	460	1777 41	155047	168656	San Pedro - Curridabat - Tres Ríos	829	8298.65 85	26539 04	2436456	2474319	0	13711 86	1352951	1352951	0	32934 4.8	188785.6	296123.2
11502-B	San Marino	216	1699 83	128212	145334	San Pedro - Curridabat - Tres Ríos	1637	6742.69 05	24729 95	2022183	2296451	0	13711 86	1268151	1271884	0	32934 4.8	187541	187541
11502-C	Rosales	96	1550 56	145980	162199	San Pedro - Curridabat - Tres Ríos	941	5079.19 06	20779 65	2259621	2327495	0	12681 51	1268151	1271884	0	19550 0.5	187726	295282.7
11502-D	Málaga	2	1112 72	105410	112059	San Pedro - Curridabat - Tres Ríos	1264	7578.24 45	17679 50	1722793	1975929	0	12531 58	1243927	1258920	0	77360. 84	70529.78	71978.62
11502-E	El Rodeo	0	1347 10	129869	135009	San Pedro - Curridabat - Tres Ríos	788	1093.69 97	21133 20	2113698	2196544	0	12681 51	1268151	1268151	0	18705 1.8	187574	187574
11502-F	Luisiana	342	1306 65	123458	131349	San Pedro - Curridabat - Tres Ríos	652	10925.9 11	20670 11	1996743	2194261	0	12681 51	1268151	1268151	0	18754 1	187541	187541
11502-G	Metodista	99	1331 97	109470	129726	San Pedro - Curridabat - Tres Ríos	956	5350.93 7	20023 12	1852919	2097210	0	12681 51	1258920	1268151	0	18705 1.8	155545.7	187296.5
11502-H	La Maravilla	129	1440 15	116376	134477	San Pedro - Curridabat - Tres Ríos	755	4077.53 5	21956 73	1923760	2030723	0	13711 86	1268151	1268151	0	16420 5.1	162979.1	163727.4
11502-I	Cedros	108	1550 00	143215	153435	San Pedro - Curridabat - Tres Ríos	2293	14016.7 34	21681 60	2049370	2099014	9031.016	13711 86	1352951	1352951	0	27137 8.3	163796	270875
11502-J	El Nogal	0	1472 12	95069	115858	San Pedro - Curridabat - Tres Ríos	1598	11838.1 58	20833 99	1702465	1922056	0	13322 12	1301014	1310245	0	16310 0.9	152989.8	160656.7
11503-A	Betania	410	2516 70	240084	241283	San Pedro - Curridabat - Tres Ríos	1291	5098.79 64	34709 88	3209688	3465906	0	14380 23	1419788	1419788	0	24102 8.2	234172.2	347591.6
11503-B	La Bandera	124 3	2343 82	213827	220215	Central	251	29224.2 78	31172 12	2523443	3020421	0	14380 23	1419788	1419788	0	22922 7.5	222573.3	222573.3
11503-C	Buenos Aires	130	2112 47	177787	185841	San Pedro - Curridabat - Tres Ríos	799	7844.86 04	26745 81	2570414	2620428	0	13878 99	1382264	1382264	0	22896 7.1	202087.9	309505.3

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			Radia l	Trunk- feeder	T-f improved				Radial	Trunk- feeder	T-f improved		Radial	Trunk- feeder	T-f improved		Radial	Trunk- feeder	T-f improved
11503-D	UCR Norte	631	2231 25	194361	209846	San Pedro - Curridabat - Tres Ríos	51	15146.9 4	28580 42	2655354	2659513	145620.5	14019 79	1382264	1382264	0	23011 5.5	202479.6	202479.6
11503-E	UNED	702	2343 81	203759	222741	San Pedro - Curridabat - Tres Ríos	609	1454.49 52	33486 45	3388159	3424069	53369.87	14380 23	1436542	1438023	0	23119 2.8	331966.9	331966.9
11503-F	Deportivas	298	1662 56	152477	165250	San Pedro - Curridabat - Tres Ríos	139	21255.4 35	22601 31	2260898	2293021	345978	12718 84	1271884	1271884	0	19597 8.2	80700.29	294805
11503-G	Alma Máter	152	1715 11	171103	176093	San Pedro - Curridabat - Tres Ríos	1174	8209.82 09	23766 95	2621603	2666908	7127.212	12848 64	1369664	1369664	0	22176 8.7	300105.7	308954.1
11504-A	San Rafael	92	1029 15	71394	89035	San Pedro - Curridabat - Tres Ríos	4215	3063.43 27	17474 38	1451455	1626225	0	12199 46	1189896	1243927	0	15349 3.2	150827.9	153242.7
11504-B	Alameda	237	1390 92	98842	115304	San Pedro - Curridabat - Tres Ríos	1552	4094.11 55	20016 10	1662475	1833134	0	13529 51	1258920	1349219	230.1784	16371 5.9	155559.4	163238.2
11504-C	Maruz	27	1474 64	87590	108632	San Pedro - Curridabat - Tres Ríos	1567	10841.2 37	20891 95	1587893	1825376	0	13322 12	1204953	1310245	0	16284 2.3	151541	160656.7
11504-D	Altadena	308	9177 8	60628	83874	San Pedro - Curridabat - Tres Ríos	942	10751.6 64	16184 41	1459895	1550779	0	12049 53	1184757	1228870	0	15174 4.4	149346.4	152384.4
11504-E	Parque del Este	64	1018 37	76279	99364	San Pedro - Curridabat - Tres Ríos	456	379335. 18	17491 41	1502027	1716899	0	13010 14	1189896	1324994	0	15349 3.2	151186	154110.6
11504-F	Salitrillos	45	1008 99	70015	91888	San Pedro - Curridabat - Tres Ríos	713	0 06	18105 06	1548345	1727534	0	12589 20	1223731	1243927	0	15518 0.7	151034	153731.9
11504-G	San Rafael	0	6574 3	54947	57479	San Pedro - Curridabat - Tres Ríos	473	0 0	13952 01	1354184	1409842	0	12669 37	1248725	1248725	0	14778 7.9	114633.9	115015.8
11504-H	San Ramón Norte	0	3210 0	30228	40309	San Pedro - Curridabat - Tres Ríos	1644	4867.91 18	11303 50	1147005	1266202	0	10132 83	1146035	1146035	0	11309 9.1	110911.6	114211.8
11504-I	La Campiña	0	1397 0	18123	20621	San Pedro - Curridabat - Tres Ríos	1858	141017. 17	79714 3.8	896956.8	967154.7	0	15088 1.1	158008.3	682246.8	0	10895 2.4	108952.4	109769
11504-J	Finca Luján	0	5353	4549	6652	San Pedro - Curridabat - Tres Ríos	628	13526.6 94	66743 7.8	638554	707449.1	0	73724. 35	9031.016	73533.28	0	10787 6.9	108121.6	108737.1
11801-A	Curridabat Oeste	225	2016 02	200693	202474	San Pedro - Curridabat - Tres Ríos	1781	6305.30 99	40053 76	3586819	4094256	0	13352 05	1335205	1335205	0	21642 4	216424	222817.7
11801-B	Curridabat Este	940	1896 37	183350	182461	San Pedro - Curridabat - Tres Ríos	1716	0	38689 54	3495587	3884049	0	13352 05	1335205	1335205	858.3088	21615 6.4	109345	109345
11801-C	Mallorca	298 4	2002 68	196034	197386	San Pedro - Curridabat - Tres Ríos	999	493.384 31	38838 14	3968891	3970798	0	13322 12	1335205	1335205	0	20254 7.7	220882	220882
11801-D	Chapultepec	215	1652 20	171065	179457	San Francisco	2390	5457.29 91	33292 58	3449306	3563393	0	13280 78	1335205	1335205	0	10575 3.7	107136.4	213398.7
11801-E	Miramontes	299	1812 99	179674	190318	San Pedro - Curridabat - Tres Ríos	1525	4122.85 77	34720 09	3518630	3616726	0	13352 05	1335205	1335205	0	10857 4.2	108625.2	215934.4
11801-F	Aromático	231 4	1751 65	172952	178932	San Francisco	504	0	34001 72	3439997	3514266	0	13280 78	1335205	1335205	0	21179 0.3	211472.3	211717
11801-G	Barrio San José	321 8	1657 98	168137	178233	San Francisco	3009	4868.96 14	32816 12	3354428	3561568	0	13280 78	1331178	1335205	0	21146 1.3	209387.7	211998.2
11801-H	Moteles Este	244 7	1800 97	184855	190082	San Francisco	157	2512.31 71	34509 74	3538803	3559410	0	97306 8.7	982099.7	982099.7	0	21874 0.4	220300.5	224634.4
11801-I	Multiplaza	245 1	2275 04	223664	237737	San Pedro - Curridabat - Tres Ríos	645	52844.0 59	41379 67	3836603	3954717	0	13366 86	1336686	1336686	0	22876 6.9	238619.8	238887.4
11801-J	José María Zeledón Sur	125 1	1968 52	202706	206735	San Pedro - Curridabat - Tres Ríos	502	0	39177 68	3590879	3604946	0	13352 05	1335205	1335205	0	22204 2.8	222291.5	222291.5
11801-K	El Hogar	416	2140 87	209933	212196	San Pedro - Curridabat - Tres Ríos	862	28442.0 51	43223 46	4190304	4289379	0	13741 79	1374179	1374179	381.9049	22824 8	227469.7	227597.6

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			Radia l	Trunk- feeder	T-f improved				Radial	Trunk- feeder	T-f improved		Radial	Trunk- feeder	T-f improved		Radial	Trunk- feeder	T-f improved
11801-L	José María Zeledón Norte	143	2109 45	206192	209924	San Pedro - Curridabat - Tres Ríos	3603	31030.9 12	42431 10	4222965	4267684	0	13741 79	1374179	1374179	0	22234 8.1	221430.1	228483.2
11801-M	La Napolera	929	2131 89	204460	217419	San Pedro - Curridabat - Tres Ríos	811	7172.38 13	40201 42	3870456	3886611	0	13352 05	1332212	1332212	0	22052 7.9	202264.3	202545.5
11801-N	El Prado	310	2299 88	203706	222140	San Pedro - Curridabat - Tres Ríos	1532	2655.25 89	37867 45	3505082	3508528	0	13741 79	1332212	1333693	0	22052 7.9	202264.3	202264.3
11801-O	Freses Oeste	225 8	2622 41	241358	254827	San Pedro - Curridabat - Tres Ríos	233	18826.5 87	45241 07	4503190	4540370	0	14410 15	1441015	1438023	0	25335 6.1	222385	211055
11801-P	CFIA	706	2386 76	225529	230187	San Pedro - Curridabat - Tres Ríos	121	26483.2 25	42445 17	4088806	4098672	0	14254 23	1387960	1386449	0	20919 7.9	220527.9	202804.1
11801-Q	Montecarlo	377	1942 14	192288	194080	San Pedro - Curridabat - Tres Ríos	1119	8473.17 23	37454 79	3901003	3920498	0	13322 12	1335205	1335205	358.1152	20241 9.7	220490.2	220757.9
11801-R	Cipreses	219 7	1669 08	158913	161400	San Pedro - Curridabat - Tres Ríos	939	12617.3 14	22916 57	2590585	3331129	0	13322 12	1332212	1332212	0	67690. 99	68382.54	68382.54
11801-S	Guayabos Sur	512	1448 54	148767	146790	San Pedro - Curridabat - Tres Ríos	2164	31426.3 11	21804 36	3352331	3376236	0	13322 12	969876	969876	0	58163. 33	67611.71	67892.91
11801-T	La Laguna Sur	130	9090 9	81724	81174	San Pedro - Curridabat - Tres Ríos	1036	0	16243 25	2088332	1847395	0	94705 9.8	608699	608699	0	45043. 88	12592.94	12428.81
11801-U	Hacienda Vieja	128	1682 77	160718	162596	San Pedro - Curridabat - Tres Ríos	1330	29502.0 08	38170 41	3305840	3359487	0	13352 05	972868.5	979995.7	477.7055	10768 7.6	106640.9	106640.9
11801-V	La Lía	163	1363 41	129529	130799	San Pedro - Curridabat - Tres Ríos	2772	16383.6 81	29823 43	2894285	2981729	0	96987 6	954545.6	954545.6	0	65069. 73	81589.2	81856.81
11801-W	Altos de Ayarco	0	9024 4	90804	94007	San Pedro - Curridabat - Tres Ríos	891	24156.2 38	25006 48	2589919	2592640	0	65303 7.8	464836.5	464836.5	0	26368. 64	26680.12	26906.3
11802-A	Granadilla	106	1055 27	85156	89837	San Pedro - Curridabat - Tres Ríos	1978	5808.43 6	17371 24	1625517	1763989	0	13010 14	1286020	1286020	362.4268	15526 1.2	153153.7	153437.7
11802-B	Montaña Rusa	132	1109 60	102371	105729	San Pedro - Curridabat - Tres Ríos	1246	0	19417 07	1909835	1984664	0	13192 49	1286020	1286020	0	15526 1.2	155628.5	155928.5
11802-C	El Farolito	118	1271 15	93465	96084	San Pedro - Curridabat - Tres Ríos	5357	4466.39 06	19354 50	1735989	1836781	0	13284 80	1286020	1286020	0	16245 0.4	151563.4	152222.1
11802-D	Bosques de Altamonte	8	9852 4	75490	81154	San Pedro - Curridabat - Tres Ríos	1267	31041.3 97	17299 44	1421419	1498748	0	13192 49	932557.2	939684.4	0	45986. 54	44162.71	44162.71
11802-E	Altamonte	126	1531 66	120672	125479	San Pedro - Curridabat - Tres Ríos	1057	9104.10 09	20453 47	1899248	1887812	0	13322 12	1313977	1313977	0	26952 1.2	161475.8	161475.8
11802-F	María Auxiliadora	34	1614 17	137765	140393	San Pedro - Curridabat - Tres Ríos	1221	670.802 94	21948 18	2182396	2235104	0	13322 12	1332212	1332212	0	27260 0.8	57321.53	164347.2
11802-G	Freses Este	0	2208 91	202401	217170	San Pedro - Curridabat - Tres Ríos	2134	9295.76 02	29547 82	3302682	3319904	0	14072 30	1407230	1408710	0	30944 3.2	180320.2	308410.8
11802-H	Guayabos Norte	190	1354 68	138107	136130	San Pedro - Curridabat - Tres Ríos	726	7754.99 94	21349 82	3312739	3331776	0	13322 12	969876	969876	0	57582. 19	66727.77	67008.97
11802-I	La Laguna Norte	0	8888 2	79262	76635	San Pedro - Curridabat - Tres Ríos	444	1595.66 11	15627 29	2012097	1633844	0	94705 9.8	599668	599668	0	45043. 88	11673.83	11509.71
11802-J	Granadilla Sur	331	8464 3	81321	82936	San Pedro - Curridabat - Tres Ríos	1931	1545.82 93	17615 07	1803507	1863676	0	94705 9.8	1140065	1285685	0	15350 1.7	119367.1	119527.7
11803-A	Sánchez	190 5	1499 15	159439	162158	San Pedro - Curridabat - Tres Ríos	666	51420.6 81	21978 82	2947852	2972950	0	13322 12	1332212	1332212	0	59573. 07	89710.51	89940.69
11803-B	Lomas de Ayarco Norte	0	1153 34	124925	125780	San Pedro - Curridabat - Tres Ríos	382	3658.11 87	17381 69	2330075	2408670	0	96987 6	969876	969876	0	47263. 01	63076.62	64549.93
11803-C	Pinares	117 8	1371 09	140150	140572	San Pedro - Curridabat - Tres Ríos	1321	12290.4 9	16773 47	2576616	2608468	0	13322 12	1332212	1332212	0	57863. 39	66192.17	67152.21

Code	Name	Jobs	Jobs accessibility			Transit zone	Populati on	Recreati on square meters	Recreation accessibility			Universities square meters	Universities accessibility			Healthcare square meters	Healthcare accessibility		
			Radial	Trunk- feeder	T-f improved				Radial	Trunk- feeder	T-f improved		Radial	Trunk- feeder	T-f improved		Radial	Trunk- feeder	T-f improved
11803-D	UACA	10	1811 54	171942	174659	San Pedro - Curridabat - Tres Ríos	0	0	22141 54	1886426	2321543	81067.79	13322 12	1332212	1332212	0	17845 5.2	169851.4	170362.7
11803-E	Aleste	255	1114 28	114498	116422	San Pedro - Curridabat - Tres Ríos	83	0	17115 11	1712163	1762033	0	97537 4.9	951053	960084	0	47574. 42	47344.24	47574.42
11803-F	Torrealba	0	6550 5	73210	73210	San Pedro - Curridabat - Tres Ríos	219	0	10204 45	1458652	1458652	0	58094 2.2	595935.6	595935.6	0	10006. 35	11455.19	11455.19
11803-G	Monterán	290	1020 21	84237	85862	San Pedro - Curridabat - Tres Ríos	563	0	18877 06	2368103	2396341	0	95635 1.7	662068.9	669196.1	0	15549 6.8	120145.8	120145.8
11803-H	Lomas de Ayarco Sur	14	7759 4	69779	71872	San Pedro - Curridabat - Tres Ríos	460	15942.5 03	14840 31	1992679	2213235	0	59966 8	384221	384221	0	11332. 88	9334.508	10488.05
11803-I	Santa Paula	567	1252 76	122797	121084	San Pedro - Curridabat - Tres Ríos	606	59685.7 77	24030 58	2488565	2753391	18234.98	96987 6	951553.1	951553.1	0	63501. 52	62882.22	63251.46
11803-J	Colonia Cruz	0	1381 03	126454	130656	San Pedro - Curridabat - Tres Ríos	579	11545.7 33	29813 35	2938487	3000980	0	79913 3.1	477694	482958.6	0	10265 4	68591.01	68591.01
11803-K	La Itaba Norte	0	1185 25	102822	107359	San Pedro - Curridabat - Tres Ríos	745	9082.60 05	26895 01	2744463	2834836	0	65415 0	388325.8	388325.8	0	29162. 15	44324.22	44591.83
11803-L	Tierras del Este	321 3	8414 4	91065	97061	San Pedro - Curridabat - Tres Ríos	314	762.575 51	20488 08	2367720	2389387	0	59966 8	599668	599668	0	19897. 38	28551.58	28551.58
11803-M	La Itaba Sur	0	7840 0	72306	77063	San Pedro - Curridabat - Tres Ríos	749	21017.6 67	20063 85	2147453	2425125	0	39435 6.4	174671.2	174671.2	0	19464. 2	25431.24	25431.24
11804-A	Tirrases	102	1922 69	188677	193753	San Francisco	1792	37850.3 19	36212 58	3582506	3614548	0	98209 9.7	982099.7	982099.7	0	22047 1	213322.4	221070.5
11804-B	La Colina	225	1992 41	205080	212695	San Francisco	937	2431.58 4	36807 85	3703322	3723494	0	98358 0.3	973068.7	973068.7	583.3884	22681 9.3	231989.9	231989.9
11804-C	Lomas de San Pancracio	804	1718 63	166588	175069	San Pedro - Curridabat - Tres Ríos	3136	7673.96 74	34902 38	3417398	3529416	0	98209 9.7	973068.7	973068.7	0	21230 7.3	211360.7	211947.6
11804-D	El Bosque	130	1421 77	142910	150629	San Pedro - Curridabat - Tres Ríos	3812	7045.27 82	30218 44	3089501	3162743	0	95981 0.1	689299	698530.2	690.9343	10105 0.2	101050.2	208129.2
11804-E	La Ponderosa	8	1263 68	123621	126815	San Francisco	1763	16601.7 68	28687 46	2880790	2906288	0	60955 9.4	422270.5	422270.5	0	66111. 19	66623.52	66623.52
11804-F	15 de Agosto	269	1232 31	126123	130375	San Francisco	4556	27997 0	35	2913776	2978525	0	46790 2.1	477694	482958.6	0	68346. 3	68591.01	68591.01
30301-A	Tres Ríos Sur	195 8	7390 3	81932	83064	San Pedro - Curridabat - Tres Ríos	3217	6883.47 38	13294 75	1895224	2311658	0	45947 8.1	474471.6	474471.6	1590.26	15204 4.3	153887.5	154697
30301-B	Tres Ríos Norte	0	8033 7	87403	88077	San Pedro - Curridabat - Tres Ríos	121	12287.9 93	18222 53	2223999	2350174	0	64874 0.7	663734.2	663734.2	0	15388 3.9	155727.1	155727.1
30301-C	Fátima	312	6510 7	74233	76304	San Pedro - Curridabat - Tres Ríos	1535	39220.0 91	13724 54	1480665	1922344	0	58094 2.2	649305.5	649305.5	0	11599. 86	13048.7	120468.7
30301-D	Florencio del Castillo	238 7	4509 5	50692	52175	San Pedro - Curridabat - Tres Ríos	903	7113.36 98	10768 44	1593176	1610995	0	17849 2.5	170938.9	170938.9	0	7025.3 35	9048.346	9274.53
30301-E	El INVU	100	4435 3	53852	55205	San Pedro - Curridabat - Tres Ríos	573	8074.92 66	10277 48	1153257	1609118	0	15594 5.4	193485.9	193485.9	0	11411 5.6	116110.5	116504.8
30301-F	La Antigua	42	3587 5	34965	36829	San Pedro - Curridabat - Tres Ríos	1132	1101.21 69	50451 2.5	859806	1301485	0	18234. 98	99302.77	99302.77	0	6345.5 97	113371.3	113765.6
30302-A	San Diego Norte	615	6579 1	79571	82070	San Pedro - Curridabat - Tres Ríos	1818	5956.41 31	17976 24	2300492	2367573	0	57693 7	455044.6	455044.6	260.663	11609. 77	15991.06	123284.4
30302-B	San Diego Sur	0	4222 8	57545	64727	San Pedro - Curridabat - Tres Ríos	1915	0	14216 95	1990540	2084560	0	12846 6.4	21967.3	25177.68	0	6316.5 71	10184.69	18881.74
30302-C	Tacona	183 8	5711 3	64630	72053	San Pedro - Curridabat - Tres Ríos	1732	0	17438 92	2217003	2294369	0	37563 0.6	197218.2	197218.2	0	9941.8 52	13056.72	13569.05

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			Radial	Trunk- feeder	T-f improved				Radial	Trunk- feeder	T-f improved		Radial	Trunk- feeder	T-f improved		Radial	Trunk- feeder	T-f improved
30302-D	Montufar	240	7391 4	105657	108061	San Pedro - Curridabat - Tres Ríos	2483	13693.8 81	14149 10	2082511	2116051	0	79129 6.1	951553.1	951553.1	377.2373	46263. 89	61495.63	62451.68
30302-E	Omega	356	4984 8	60477	62742	San Pedro - Curridabat - Tres Ríos	525	0	12205 02	1802000	1820765	0	36549 5.3	380488.7	384221	0	8326.8 51	13236.01	120656.9
30302-F	Terramall	202 7	5731 9	81265	84030	San Pedro - Curridabat - Tres Ríos	2362	59309.8 88	17285 06	1960111	2333212	0	37563 0.6	599668	599668	0	11203. 78	14064.42	123016.8
30302-G	Mesén Este	0	3650 5	52306	70619	San Pedro - Curridabat - Tres Ríos	315	0	13740 30	1905127	2330565	0	18234. 98	21967.3	21967.3	0	6316.5 71	17170.84	25826.2
30302-H	Girales	0	4153 1	44353	45304	San Pedro - Curridabat - Tres Ríos	2051	1485.41 9	93760 6.5	1469055	1501929	0	15594 5.4	33228.42	114296.2	0	4758.8 95	7707.902	8663.948
30302-I	Santiago	412	4153 9	51203	54189	San Pedro - Curridabat - Tres Ríos	8847	13716.5 6	95420 8.3	1589273	1636869	0	15594 5.4	170938.9	174671.2	281.2001	4758.8 95	8437.764	9857.918
30302-J	La Carpintera Oeste	0	3126 3	24683	25019	San Pedro - Curridabat - Tres Ríos	365	0	45646 4.1	751253	751253	0	18234. 98	18234.98	18234.98	0	6345.5 97	5129.173	112154.9
30303-A	San Juan Oeste	520	1367 05	142513	143217	San Pedro - Curridabat - Tres Ríos	1789	4710.19 09	20315 15	2587749	2625051	0	98623 4.4	1332212	1332212	0	59456. 9	67180.65	68021.41
30303-B	San Juan Este	526	1179 99	127361	127579	San Pedro - Curridabat - Tres Ríos	880	9643.65 69	18399 81	2390173	2459711	0	96987 6	969876	977003.2	0	50035. 54	66600.02	173328.8
30303-C	Herrán	338	8367 7	102063	103715	San Pedro - Curridabat - Tres Ríos	1603	2404.90 55	15084 01	1606120	2050315	0	93691 6.6	941761.1	941761.1	0	47379. 35	54568.53	161988.5
30303-D	Villas de Ayarco Norte	325	1063 86	93877	95489	San Pedro - Curridabat - Tres Ríos	2877	2697.42 14	16767 11	2074103	2135612	0	96008 4	662829.8	662829.8	0	47263. 01	27617.7	29259.71
30303-E	Villas de Ayarco	53	7099 7	75287	78000	San Pedro - Curridabat - Tres Ríos	3339	15797.6 41	13836 60	1911657	2034215	0	67013 7.8	394356.4	394356.4	160.5438	44920. 08	19311.27	20948.35
30303-F	Villas de Ayarco Sur	11	5479 3	57484	58369	San Pedro - Curridabat - Tres Ríos	627	0	13265 19	1733512	1794375	0	36922 7.6	174671.2	174671.2	0	7194.4 15	9222.339	10178.39
30303-G	Gregal	0	4504 8	51020	53239	San Pedro - Curridabat - Tres Ríos	385	0	81924 9.9	926125.8	927121.6	0	36549 5.3	380488.7	380488.7	0	5176.6 47	7316.42	7316.42
30303-H	Terracafé	403	4396 7	52576	52595	San Pedro - Curridabat - Tres Ríos	431	0	68886 0	1142046	1142046	0	15594 5.4	193485.9	193485.9	0	6958.9 49	8474.173	8474.173
30303-I	Hacienda Imperial	0	3438 2	34459	38240	San Pedro - Curridabat - Tres Ríos	338	0	88609 7.3	1001906	1031828	0	13771 0.5	99302.77	99302.77	0	4532.5 19	5229.791	6075.464
30303-J	Concepción Sur	89	4471 3	50716	51143	San Pedro - Curridabat - Tres Ríos	2251	3032.63 21	11059 21	1323422	1345680	0	42745 5	159950.6	159950.6	0	6249.8 28	7119.608	8079.649
30304-A	San Rafael Sur	896	4823 6	55325	57213	San Pedro - Curridabat - Tres Ríos	1358	4620.72 5	11705 56	1596930	2050604	0	36549 5.3	193485.9	377755.1	0	7635.9 16	116504.8	116504.8
30304-B	San Rafael Norte	416	3450 0	24264	29315	San Pedro - Curridabat - Tres Ríos	1198	1697.11 5	45722 6.6	744678.5	777682.6	0	18234. 98	18234.98	18234.98	0	6345.5 97	112154.9	112154.9
30304-C	San Miguel	0	3581 2	33966	35098	San Pedro - Curridabat - Tres Ríos	1479	1690.02 46	51081 7.8	811841.3	826682.2	0	99302. 77	18234.98	18234.98	0	6345.5 97	113371.3	113371.3
30304-D	Montealegre	215	3222 1	21041	26102	San Pedro - Curridabat - Tres Ríos	453	0	42881 1.7	744185.1	776920	0	18234. 98	18234.98	18234.98	0	6185.0 53	112154.9	112154.9
30304-E	La Carpintera Este	0	3488 9	33909	34576	San Pedro - Curridabat - Tres Ríos	3761	0	85980 6	811841.3	813387.2	0	99302. 77	18234.98	18234.98	0	6345.5 97	6345.597	113371.3
30304-F	San Vicente	57	1670 4	16241	20156	San Pedro - Curridabat - Tres Ríos	2882	0	28012 7.7	285741.8	673754.6	0	0	0	0	729.8627	4463.7 56	4465.299	112154.9
30304-G	Ochomogo	0	1301 1	16217	16270	San Pedro - Curridabat - Tres Ríos	24	0	23011 0.1	285741.8	285741.8	0	0	0	0	0	3191.3 67	4465.299	4465.299
30304-H	El Fierro	106	1301 1	20989	21035	San Pedro - Curridabat - Tres Ríos	1935	5449.42 72	23011 0.1	388024.5	388024.5	0	0	18234.98	18234.98	610.5814	3191.3 67	5129.173	112154.9

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			Radial	Trunk- feeder	T-f improved				Radial	Trunk- feeder	T-f improved		Radial	Trunk- feeder	T-f improved		Radial	Trunk- feeder	T-f improved
30304-I	Tajo	29	4159	11458	12026	San Pedro - Curridabat - Tres Ríos	102	0	96493.11	206924.5	211136.9	0	0	0	0	0	2205.754	110150.6	110880.4
30304-J	Yerbabuena	0	20936	28183	30047	San Pedro - Curridabat - Tres Ríos	1083	1295.1053	372226.9	771924.3	1213603	0	18234.98	18234.98	18234.98	0	4968.629	112154.9	112549.2
30305-A	Concepción Norte	592	64936	69884	68451	San Pedro - Curridabat - Tres Ríos	3976	332.33432	1571085	1519328	1955759	0	731963.8	261911.6	270942.6	244.7155	43908.35	9611.239	10341.1
30305-B	La Cima Oeste	5	17190	19599	25602	San Pedro - Curridabat - Tres Ríos	1977	0	730969.6	861879.9	1047013	0	0	0	31271.17	0	110869.3	111976.4	112747.5
30305-C	Huerta Salvaje	0	46869	52874	52809	San Pedro - Curridabat - Tres Ríos	580	13348.46	739603.7	1149801	1147496	0	178492.5	193485.9	193485.9	0	7635.916	8474.173	9084.755
30305-D	Salitrillos	2219	51938	51405	51519	San Pedro - Curridabat - Tres Ríos	2238	995.84814	1130763	1225236	1241650	0	431130.6	159950.6	159950.6	0	7520.638	7501.513	115257.1
30305-E	San Francisco	24	42801	24166	29633	San Pedro - Curridabat - Tres Ríos	4067	0	1064224	749389.1	890356.2	0	182497.6	81067.79	81067.79	0	113045.4	112232.7	113440.3
30305-F	Los Ángeles	77	50505	33182	35632	San Pedro - Curridabat - Tres Ríos	3582	4788.316	1222878	1028795	1200393	0	440324	99302.77	99302.77	258.6151	115632.5	112940.6	113101.2
30305-G	Calle Naranjo	239	53568	56850	62155	San Pedro - Curridabat - Tres Ríos	1260	0	1431674	1438595	1529053	0	450297	187707.4	268909.6	0	116065.6	116206.2	117366.8
30306-A	Dulce Nombre	62	34996	21182	30674	San Pedro - Curridabat - Tres Ríos	1448	11503.299	837921.8	1080992	1209692	0	99302.77	0	18234.98	369.2367	112600.2	111544.3	112747.5
30306-B	Jugos del Campo	33	21068	21791	22487	San Pedro - Curridabat - Tres Ríos	976	1697.8083	417413.6	766792.1	1156879	0	99302.77	18234.98	18234.98	0	110653.9	112154.9	112154.9
30306-C	El Carmen	48	16671	21224	22249	San Pedro - Curridabat - Tres Ríos	2178	6421.3353	306231.8	707106.4	1104351	0	81067.79	0	0	246.258	110372.7	112154.9	112385.1
30306-D	La Cima Este	19	16774	16374	22700	San Pedro - Curridabat - Tres Ríos	267	0	721103.4	835688	932151.7	0	0	0	9031.016	0	110588.1	111317.9	111976.4
30306-E	Las Brisas	0	12550	18456	19340	San Pedro - Curridabat - Tres Ríos	2311	0	243447.4	647596.8	673288.2	0	0	0	0	0	109734.8	111139	111994.3
30307-A	San Ramón	511	39746	40551	47952	San Pedro - Curridabat - Tres Ríos	1646	4212.458	1196001	1273040	1383275	0	1022036	1146035	1158904	0	115047.5	114758.3	116048.3
30307-B	Pizote	46	11830	9224	19351	San Pedro - Curridabat - Tres Ríos	1142	0	732368.3	723729.8	951014.3	0	121717.5	69528.1	544401.9	107025.7	110758.1	110327.4	112511.8
30307-C	El Bosque	0	31376	38319	43418	San Pedro - Curridabat - Tres Ríos	1211	0	999880.1	1282117	1383120	0	231948.9	713636.9	754419	0	111359	113141.7	113733
30307-D	Tavichería	147	97585	75270	78315	San Pedro - Curridabat - Tres Ríos	642	0	1749145	1721805	1762158	0	1301014	1265824	1265824	0	154783.5	152514.6	153191.8
30308-A	Río Azul	1353	132137	158755	169885	San Francisco	902	437466.23	2945883	3181051	3350092	0	107928	367533.8	420903.7	394.2996	102535.7	209673.8	219185.2
30308-B	Quebradas	6	119804	118817	129386	San Francisco	1120	356160.54	2773505	2860705	3009138	0	70229.07	64874.79	64874.79	0	65874.54	66490.03	68449
30308-C	Linda Vista	48	70729	86189	94082	San Francisco	2628	0	2182803	2374293	2521507	0	7837.048	22830.49	22830.49	226.184	41039.61	44367.98	44803.42
30308-D	Loma Gobierno	14	82514	103392	101056	San Francisco	3066	6247.837	2372771	2714580	2630286	0	22830.49	46330.03	28095.05	0	44867.58	65432.83	66678.68
30308-E	Buenos Aires	0	63708	84688	92485	San Francisco	2046	0	2255489	2463406	2503777	0	24959.83	41065.47	41065.47	0	42161.37	43994.61	43994.61
30308-F	Mesén Oeste	0	35409	65150	77809	San Pedro - Curridabat - Tres Ríos	866	0	1758407	2278497	2321060	0	21967.3	21967.3	41065.47	0	7675.768	24005.69	44394.71
30308-G	Villas de Ayarco Sur Sur	0	47715	46752	50355	San Pedro - Curridabat - Tres Ríos	743	0	1145303	1615085	1676862	0	159677.8	36960.74	36960.74	0	6020.261	7863.399	8606.844

Code	Name	Jobs	Jobs accessibility			Transit zone	Populati on	Recreati on square meters	Recreation accessibility			Universities square meters	Universities accessibility			Healthcare square meters	Healthcare accessibility		
			Radial	Trunk- feeder	T-f improved				Radial	Trunk- feeder	T-f improved		Radial	Trunk- feeder	T-f improved		Radial	Trunk- feeder	T-f improved
40101-A	Heredia Norte	1377	248008	247122	248967	Uruca - Heredia Sur	628	9128.3066	1230204	1292783	1307709	0	664258.1	680885.7	680885.7	0	427650.9	429490.5	429490.5
40101-B	Heredia Sur	2915	275793	273845	283443	Uruca - Heredia Sur	532	7033.489	1518892	1553948	1556736	0	726818	698831.8	698831.8	0	429882.2	429882.2	430221.1
40101-C	Lankaster	2126	239880	237582	239801	Uruca - Heredia Sur	1431	440.55391	1233335	1237775	1293400	0	663145.9	663145.9	663145.9	1610.209	427650.9	427390.4	427650.9
40101-D	San Vicente	838	221373	235565	236156	Uruca - Heredia Sur	981	1983.2486	1040772	1130950	1130950	0	641169.1	642281.3	642281.3	0	417022.7	427390.4	427390.4
40101-E	San Vicente de Paúl	421	261370	262032	265694	Uruca - Heredia Sur	1618	2104.9335	1317577	1353135	1400670	0	698831.8	698831.8	698831.8	0	429490.5	429490.5	429490.5
40101-F	Barrio Chino	67	274413	276400	279091	Uruca - Heredia Sur	801	5255.0763	1505403	1527337	1607021	0	726818	726818	726818	0	429490.5	429490.5	429829.4
40101-G	El Carmen	2053	274145	272518	289504	Uruca - Heredia Sur	1283	3112.8673	1619076	1605722	1644237	0	699560.2	699560.2	699560.2	0	429882.2	429882.2	430221.1
40101-H	UNA	557	179625	166325	210932	Tibás - Santo Domingo	697	14968.927	920529.5	947363.3	1001757	83669.89	623127.2	623127.2	623127.2	0	392137	391945.7	392137
40101-I	Pirro	663	289744	303461	313129	Tibás - Santo Domingo	1610	13255.76	1656318	1670407	1731794	14226.34	691749.3	699560.2	699560.2	0	543709	544031.6	544915.7
40103-A	San Francisco	4304	152332	132595	142925	Uruca - Heredia Sur	1799	80361.007	925129.9	878944.2	919291	0	603530	601302.7	601302.7	0	377664.5	114427.2	114427.2
40103-B	Bosques de Altamira	1066	84488	101337	101337	Uruca - Heredia Sur	3742	9880.3255	535094.3	565912.8	565912.8	0	265651.7	491282.8	491282.8	0	108622.9	108993.3	108993.3
40103-C	Berta Eugenia	683	101371	102794	105338	Uruca - Heredia Sur	5074	17744.548	552313.4	580048.9	588189.9	0	407612.9	321713.9	407612.9	0	108437.3	108076.1	108076.1
40103-D	Los Sauces	291	116885	115384	116625	Uruca - Heredia Sur	3098	23421.438	772614.1	745335.7	768102.4	0	601302.7	601302.7	601302.7	0	114072.8	113416.3	113718.8
40103-E	Hospital	772	179563	206388	206388	Uruca - Heredia Sur	261	29406.981	937963.7	939628	939628	0	604472	614838	614838	104369.6	377664.5	377664.5	377664.5
40103-F	Bernardo Benavides	117	211206	211206	211703	Uruca - Heredia Sur	2348	422.48877	934386.5	934386.5	946971.7	0	614838	614838	614838	495.8202	377664.5	377664.5	377664.5
40103-G	La Esperanza	632	231087	227101	268667	Uruca - Heredia Sur	1041	1356.5533	1422772	1421506	1459166	0	664986.4	677586.7	677586.7	0	428042.6	428042.6	428042.6
40103-H	Plaza Bratsi	950	306621	303253	306694	Uruca - Heredia Sur	531	44481.917	2008335	1680025	2085347	0	701040.8	701040.8	701040.8	0	543517.8	543163.7	543856.7
40103-I	Guararí Norte	16	189036	206020	216522	Uruca - Heredia Sur	5825	5356.7597	853320.8	899039.7	1022076	0	613896	613896	613896	0	377664.5	378316.8	378316.8
40103-J	La Milpa Norte	8	225186	192314	232691	Uruca - Heredia Sur	4147	3862.6533	1023759	843187.8	1083474	0	532767.9	532039.6	532767.9	0	491952.3	378125.6	492143.5
40103-K	Paseo de Las Flores	2885	315372	315610	317722	Uruca - Heredia Sur	449	99584.883	2075980	2138453	2175991	0	729027	729027	729027	0	543517.8	543163.7	543856.7
40103-L	Guararí Sur	155	211756	190740	258804	Uruca - Heredia Sur	4828	16672.417	967805	856876.2	1719235	0	614624.3	613896	616104.9	3757.548	484496.1	377025.4	492143.5
40103-M	La Milpa Sur	560	241513	235601	264944	Uruca - Heredia Sur	2823	2487.1078	1186890	1134831	1758440	0	616104.9	614624.3	616104.9	0	491952.3	491598.3	496477.4
40103-N	El Roble	8	186078	195121	248121	Uruca - Heredia Sur	700	1876.6204	743172.2	955449.4	1638477	0	539919.4	540647.7	616104.9	0	376582.4	376773.6	495769
40103-O	Los Lagos Sur	272	251187	239756	247924	Uruca - Heredia Sur	2375	17047.276	1566220	1108020	1589141	0	534248.5	534248.5	616104.9	302.4499	496286.2	491598.3	496286.2
40103-P	Los Lagos Norte	96	272595	257470	263878	Uruca - Heredia Sur	1708	2248.3778	2406649	1630277	1748559	0	630600.7	534248.5	616104.9	0	496629.2	491598.3	496477.4

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			Radial	Trunk- feeder	T-f improved				Radial	Trunk- feeder	T-f improved		Radial	Trunk- feeder	T-f improved		Radial	Trunk- feeder	T-f improved
40103-Q	Pequeño Mundo	2902	252201	254665	257086	Uruca - Heredia Sur	338	16074.373	1585881	1585053	1657409	0	534248.5	534248.5	534248.5	0	496286.2	496286.2	496286.2
40104-A	Barreal	2781	221048	216561	224441	Uruca - Heredia Sur	2831	7687.1468	1003911	981224.4	1023813	0	540647.7	540647.7	614624.3	1038.804	484376	490415.7	490992.2
40104-B	La Carpintera	1990	167311	152367	165596	Uruca - Heredia Sur	2775	4077.7569	728403.5	704176.9	731215.2	0	493510.2	493510.2	603530	0	376644.8	376290.7	376513.2
40104-C	Imas	171	149273	110746	113013	Uruca - Heredia Sur	4530	6015.2218	706898.5	677145.4	708238.9	0	493510.2	491282.8	601302.7	0	376644.8	113053.3	113275.8
40104-D	Vistas del Valle	251	124259	111772	116259	Uruca - Heredia Sur	3219	25394.763	690738.7	665837.9	740828.9	81856.36	565259.4	601302.7	601302.7	0	112973.3	112750.9	113416.3
40104-E	Terrazas del Café	103	113817	112779	152478	Uruca - Heredia Sur	954	8660.1083	718645.9	718645.9	751038.2	0	601302.7	601302.7	603530	0	113718.8	113718.8	376956.1
40104-F	Guararí Oeste	6	183490	184729	220828	Uruca - Heredia Sur	1354	639.1112	739552.6	763234.7	1047669	0	613896	613896	614624.3	0	376956.1	376956.1	492143.5
40104-G	Bajo Las Cabras	32	186078	194545	248153	Uruca - Heredia Sur	1588	4961.0585	743172.2	964128.6	1644840	0	539919.4	614624.3	616104.9	0	376582.4	376773.6	495769
40104-H	La Valencia Oeste	4392	357112	355650	365364	Uruca - Heredia Sur	594	2525.4167	2979507	3008751	3022416	0	685693.8	685693.8	710216.8	0	566049.7	565090.3	565090.3
40104-I	Lagunilla	6633	285687	279383	294220	Uruca - Heredia Sur	5658	30818.468	2477093	2518731	2595316	0	647700.6	630600.7	661753.8	370.4271	531151	496820.4	531151
40104-J	UNA	10216	226972	234202	240992	Uruca - Heredia Sur	471	0	1023252	1119982	1573981	225631.2	540647.7	542128.3	542128.3	0	484376	490992.2	490992.2
40104-K	Noa	2940	234236	224795	237440	Uruca - Heredia Sur	1377	0	1460527	1055167	1562501	0	540647.7	540647.7	542128.3	0	490769.7	490638.1	490992.2
40104-L	Castella	1038	217483	185610	191919	Uruca - Heredia Sur	1849	0	1325194	714837.7	856751.6	0	422415.2	539919.4	539919.4	0	489699.7	270869.2	375995.1
40104-M	Los Arcos	719	100721	51890	71767	Uruca - Heredia Sur	778	18050.541	244680.1	88001.95	122898.2	0	227858.5	0	225631.2	0	265191.9	1038.804	1409.231
40104-N	Cariari	2592	124697	113225	159922	Uruca - Heredia Sur	15	37851.498	452871.2	511543.1	642863	0	309714.9	395613.9	395613.9	0	265191.9	5358.003	374877.7
40104-O	Cenada	10987	164290	162003	167414	Uruca - Heredia Sur	104	1084.9648	682836.6	669684.1	729181.1	0	409840.3	409840.3	445883.6	0	375727.6	375373.5	375734.7
40104-P	Ultrapark	15753	137336	147991	161371	Uruca - Heredia Sur	362	12284.385	414962.7	641198.7	668327.5	0	309714.9	395613.9	409840.3	0	270559.7	374877.7	375373.5
40104-Q	ZF Metropolitana	15934	147241	160652	161455	Uruca - Heredia Sur	99	5801.9829	620062.1	650277	664215.1	0	395613.9	409840.3	409840.3	0	375425.1	375373.5	375734.7
40104-R	La Aurora	184	123756	96410	122019	Uruca - Heredia Sur	5256	5241.4313	384454.6	366627.7	570621.3	0	307487.5	307487.5	393386.6	0	265191.9	3210.665	107882.8
40104-S	Santa Cecilia	659	103755	99641	99641	Uruca - Heredia Sur	3448	17478.116	581905.6	540680.9	540680.9	0	321713.9	321713.9	321713.9	191.2243	108076.1	108076.1	108076.1
40301-A	Santo Domingo	1373	291635	287672	296583	Tibás - Santo Domingo	1603	7644.8027	1851038	1788044	1910662	0	433813.4	656234.2	741300.9	0	584312.7	577918.9	584881.6
40301-B	Santo Domingo Sur	88	241183	261005	279969	Tibás - Santo Domingo	956	0	1709276	1679112	1729024	0	420811.1	420811.1	646442.3	0	311386.3	566750.4	575662.5
40301-C	Santo Domingo Norte	581	268028	276955	286563	Tibás - Santo Domingo	1496	11561.099	1749869	1718340	1821327	0	420811.1	646442.3	728298.6	556.0742	574623.7	575662.5	576231.4
40302-A	San Vicente	723	111788	107348	141709	Tibás - Santo Domingo	2689	26155.76	1041851	966020.3	1189735	0	365089.2	365089.2	370058.6	0	158658.7	53532.8	165059.5
40302-B	La Colonia	178	219192	209630	217614	Tibás - Santo Domingo	2050	40369.973	1544287	1492679	1578700	0	391344.3	381306.1	463162.5	0	295140	274075.1	275113.9

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			Radial	Trunk- feeder	T-f improved				Radial	Trunk- feeder	T-f improved		Radial	Trunk- feeder	T-f improved		Radial	Trunk- feeder	T-f improved
40302-C	Madrid	310	1570 36	156850	180677	Tibás - Santo Domingo	1261	5704.02 35	12760 86	1261778	1333118	0	37005 8.6	370058.6	381306.1	0	26907 5.1	269943	273700.5
40302-D	Durango	105 4	8097 0	84735	89136	Tibás - Santo Domingo	772	4696.41 78	70849 8.8	774192	782909.8	0	17551 3.4	262090.2	347989.3	0	19281. 42	19281.42	19281.42
40302-E	Yurusti	256	2686 2	32714	32886	Tibás - Santo Domingo	305	5345.55 28	31897 3.7	382909.9	389238.3	0	13393 9.5	133939.5	133939.5	0	2268.7 78	14017.55	14017.55
40303-A	San Miguel	182 7	7697 6	47666	64662	Tibás - Santo Domingo	3107	5342.19 26	55707 6.7	483121.5	646764.6	0	60908. 15	43808.21	96951.45	0	15837 9.3	12952.44	158918.3
40303-B	Castilla	172	5396 6	48466	63437	Tibás - Santo Domingo	2993	6328.41 77	47886 5.2	409417.8	609087.1	0	43808. 21	60908.15	60908.15	0	16132. 71	46685.6	158806.8
40303-C	Ruta 32	392 2	1309 95	128784	162847	Tibás - Santo Domingo	864	0	97381 9.9	957927	1132424	0	65877. 51	66989.71	136686.1	0	18392 8.2	183293.1	184150.6
40303-D	Socorro	0	5321 1	46613	91951	Tibás - Santo Domingo	776	0	55442 5.2	565482.2	862953	0	43808. 21	43808.21	61850.17	0	16737. 65	12403.81	160046.8
40303-E	Cuesta Rojas	437	1751 98	168839	195192	Tibás - Santo Domingo	156	0	12983 36	1135066	1424140	0	16467 2.3	164672.3	261344.5	0	20606 9.8	205769.9	209338.1
40303-F	Lincoln	468	1463 92	126998	166764	Tibás - Santo Domingo	147	7090.48 8	10072 28	818751.6	1117242	0	86416. 47	77125.06	136686.1	0	18466 0.2	183401.6	193198.8
40304-A	Paracito	490	6993 8	105269	107211	Moravia - Paracito	474	5105.85 7	85758 2.5	1236456	1259778	0	46814 2.3	860274.7	862307.7	151.9885	64517. 36	67047.4	67386.29
40304-B	La Tigrilla	417	4022 5	30795	34921	Moravia - Paracito	1942	2422.07 29	52820 0.3	519786.8	543336.2	0	60655. 55	43001.33	43943.34	0	5097.7 29	5097.729	5097.729
40304-C	Las Juntas	0	8540	6699	9808	Moravia - Paracito	151	0	58208. 52	44769.8	58208.52	0	0	0	0	0	1170.6 82	1170.682	1170.682
40305-A	Santo Tomás Sur	313	1054 90	105534	129324	Tibás - Santo Domingo	1308	7343.76 47	91667 1	907334.6	1100675	0	34798 9.3	365089.2	365089.2	0	20031. 51	54362.16	54732.59
40305-B	Santo Tomás Norte	591	1055 76	119992	130007	Tibás - Santo Domingo	1383	0	92170 7	1024802	1120297	0	34798 9.3	365089.2	365089.2	0	20031. 51	54362.16	54884.58
40305-C	Calle Higinia	16	8031 3	79022	94507	Tibás - Santo Domingo	2528	0	75976 8.8	774192	793581.1	0	33538 9.1	262090.2	347989.3	0	18712. 52	19281.42	19281.42
40305-D	San Martín	317	2285 71	223807	226337	Tibás - Santo Domingo	2221	182.467 92	15752 15	1565684	1600084	0	39059 7.6	390597.6	390597.6	708.401	30732 6.3	292266.4	296023.9
40306-A	Santa Rosa	264	2896 60	276956	288887	Tibás - Santo Domingo	2643	8805.10 02	17849 53	1794098	1881065	36043.29	10919 50	892959.9	974816.3	0	57047 6.4	549411.5	549411.5
40306-B	La Victoria	0	2600 53	222548	261557	Tibás - Santo Domingo	2469	4626.75 12	15378 80	1402180	1511082	0	84223 3.1	432332.8	657964	0	54659 0.2	436216	545540.5
40306-C	Inbio	412	2244 51	222366	221853	Tibás - Santo Domingo	1170	19167.8 08	15785 85	1553046	1586727	0	39059 7.6	390597.6	390597.6	0	29256 6.3	292266.4	296023.9
40306-D	Leyenda Dorada	54	1720 11	193117	211985	Tibás - Santo Domingo	646	0	13405 08	1384932	1410836	0	37005 8.6	371170.8	596801.9	0	27370 0.5	273700.5	274739.3
40306-E	Rinconada	334 3	2125 72	213169	237933	Tibás - Santo Domingo	510	0	12701 24	1224590	1361802	0	53039 8.7	542998.9	616975.5	0	42929 9.2	429691	430029.9
40306-F	Megasúper	161 32	1942 58	201141	202279	Tibás - Santo Domingo	512	0	98753 9.7	1136348	1165112	10365.94	50842 5.2	512452.5	525052.7	0	42745 9.6	429299.2	429299.2
40306-G	La Valencia Este	315 3	3326 03	321805	325026	Tibás - Santo Domingo	74	39367.9 73	28394 46	2850813	2938296	0	68055 4.2	698378.6	702406	0	54177 9.2	542212.4	544052
40307-A	Los Ángeles	99	4709 5	45760	55567	Tibás - Santo Domingo	1433	5597.00 94	51222 1.7	492584.9	602215.2	0	17774 7.7	165147.5	177747.7	338.8877	19072. 28	14738.44	19072.28
40307-B	La Zamora	14	2325 4	17999	27023	Tibás - Santo Domingo	2431	1273.73 61	27779 1.9	197556.6	319124.4	0	50269. 63	36043.29	133939.5	0	12533. 26	2394.689	2837.678

Code	Name	Jobs	Jobs accessibility			Transit zone	Populati on	Recreati on square meters	Recreation accessibility			Universities square meters	Universities accessibility			Healthcare square meters	Healthcare accessibility		
			Radial	Trunk- feeder	T-f improved				Radial	Trunk- feeder	T-f improved		Radial	Trunk- feeder	T-f improved		Radial	Trunk- feeder	T-f improved
40307-C	Las Gemas	0	1456 6	12705	18520	Tibás - Santo Domingo	264	0	15437 0.3	167316.3	209113.1	0	0	0	50269.63	0	2172.2 63	1603.363	2394.689
40307-D	Lourdes	0	6842 5	85388	87623	Tibás - Santo Domingo	766	4987.82 92	60364 3.6	735542.3	745370.1	0	17551 3.4	262090.2	347989.3	0	18920. 29	18712.52	19281.42
40308-A	San Luis	223	2995 3	16339	36331	Tibás - Santo Domingo	1054	5420.10 77	27540 9.3	150955.2	347248.2	0	14495. 77	0	31207.98	568.8999	11865. 32	11865.32	12573.73
40308-B	Canoa	0	3011 9	13870	22295	Tibás - Santo Domingo	761	0	28881 2.9	146715.9	262210.1	0	14495. 77	0	0	0	11865. 32	1726.757	12573.73
40308-C	Caballero	0	1689 5	12098	19490	Tibás - Santo Domingo	2281	0	18858 6.2	120585.4	220831.5	0	0	0	50269.63	0	12462. 82	2172.263	2505.595
40601-A	Cementerio	13	2376 0	25555	25727	Tibás - Santo Domingo	817	3296.44 67	29124 8.1	290226.8	296555.2	0	13393 9.5	133939.5	133939.5	0	2268.7 78	2268.778	2268.778
40601-B	Colonia Isidreña	86	1203 4	12587	12759	Tibás - Santo Domingo	1541	5036.01 56	12058 5.4	160987.9	167316.3	0	0	0	0	0	2172.2 63	1603.363	1603.363
40601-C	El Volador	88	8306 6	7029	9644	Tibás - Santo Domingo	282	0	43449. 04	33332.51	52002.15	0	0	0	0	0	907.78 76	338.8877	338.8877
40604-A	Quebradas	76	2603 6	26387	26559	Tibás - Santo Domingo	1146	455.517 98	30562 2.7	310800.7	317129.2	0	13393 9.5	133939.5	133939.5	0	2268.7 78	2268.778	2268.778
40901-A	San Pablo	107 7	1440 80	129260	135690	Tibás - Santo Domingo	3351	15106.1 94	10781 25	1134699	1190499	0	35021 6.7	367316.6	449173	442.9894	39165 7	162489.8	163867.5
40901-B	Quintana Sur	32	1110 22	113668	115111	Tibás - Santo Domingo	1349	6363.53 78	10315 42	1071443	1109638	0	34798 9.3	365089.2	365089.2	0	12841 9.6	158732.3	162828.7
40901-C	Las Pilas	80	2344 60	234009	232690	Tibás - Santo Domingo	1797	4088.58 28	14373 26	1429346	1470176	0	59902 9.3	599029.3	455254.5	0	53797 6.7	537976.7	537976.7
40901-D	La Puebla Norte	116	2265 66	230512	253649	Tibás - Santo Domingo	3106	2738.87 83	14303 40	1462988	1521320	0	67977 3.5	679773.5	679773.5	0	53696 1.2	537637.8	538167.9
40901-E	María Auxiliadora	698	6275 7	59471	77603	Tibás - Santo Domingo	2335	8679.24 12	76391 3	758127.9	828755.7	73976.55	29381 5.1	293815.1	375671.5	0	11319 7.1	113197.1	114235.9
40901-F	El Uriche	101 4	5130 4	51304	52698	Tibás - Santo Domingo	3851	19660.6 95	66113 4.3	661134.3	697349.9	0	29381 5.1	293815.1	293815.1	0	10876 6.7	108766.7	112826.7
40902-A	Miraflores	155	2572 66	249063	308630	Tibás - Santo Domingo	2159	7224.81 08	16217 55	1595062	1665589	0	92408 9.5	739820.3	739820.3	361.1319	43951 1.3	439511.3	440041.4
40902-B	Rafaela Cordero	94	1909 03	189093	191346	Tibás - Santo Domingo	2146	4449.17 47	11511 09	1191289	1201583	0	59388 9.8	593889.8	593889.8	0	42745 9.6	427459.6	427798.5
40902-C	La Puebla Sur	136	2203 45	220517	226652	Tibás - Santo Domingo	2175	623.769 12	13360 54	1357090	1430589	0	60916 4.7	609164.7	698831.8	0	42969 1	429691	430029.9
40902-D	Rincón de Ricardo	242	2121 09	210875	221459	Tibás - Santo Domingo	2878	3440.50 2	13001 87	1312450	1357293	0	59791 7.1	597917.1	679773.5	222.4256	53573 1.2	429691	537108.9
40902-E	Walmart Heredia	237 2	2870 22	299460	311578	Uruca - Heredia Sur	325	1284.03 77	25221 08	2626818	2786936	0	64371 1.9	583498.5	678466	0	49682 0.4	541722.8	542212.4
40902-F	Ulatina	157 5	3074 21	307596	309653	Uruca - Heredia Sur	192	4407.65 84	20166 81	2041264	2087698	85899.06	68844 0.5	701040.8	701040.8	0	54351 7.8	543517.8	543856.7