# veldacademie

# Mobility in picture Gps research elderly Oud Charlois-Rotterdam











1. Research Proposal	1
2. Flyer	4
3. Questionnaire	6
4. Questionnaire results	10
5. Gps research results maps	14
6. Conclusion	18



# Research proposal GPS Tracing

## Goals

We divide four goals. The first two goals are closely related and mentioned with the title 'lifestyle'. The same holds for the third and fourth goal. They are about 'routing'.

# <u>Lifestyle</u>

- 1. Get insight in the activity pattern of elderly
  - frequency of outdoor activities (how often do they leave their home)
  - duration of activities (how much time do they spend outdoors)
  - action radius (how far do they go)
  - use of facilities (which facilities they visit)
- 2. Testing the hypothetical lifestyles
  - Check whether the actual lifestyle of people in Oud Charlois fits with the hypothetical lifestyles developed

# Routing

- 3. Get insight in routing
  - Which streets do they use, where do they cross streets
  - Do they make detours? Why?
  - Means of transport (car, bike, public transport, walking)
  - Distance and time of a tour
- 4. Know more about walking characteristics of elderly,
  - Walking distance
  - Resting places: location, distance and time between them

Knowledge about lifestyle is important for a good programming of facilities. For allocation of the facilities this information is also important, together with information about routing. Routing knowledge will also be used to improve the design of public space.

# Research method

For the two types of goals, different research methods are needed.

## Lifestyle - day

At the beginning of the day we go to the home of a participant and give him a GPS receiver. This is a participant form which we know he or she will leave home that day. The hole day the participant caries the receiver. At the and of the day we will visit his home again, take the receiver and have a questionnaire with the participant. Then we have information about the activity pattern of this person for a certain day.

# Routing - tour

We go to a certain place where several elderly live. When someone leaves the building, we give him a GPS receiver. When this person is back in the building the receiver is handed in and we



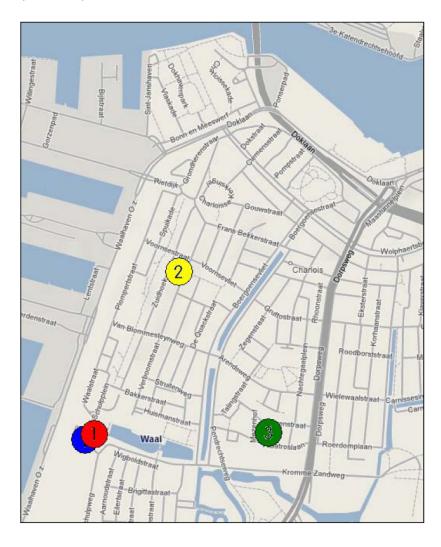
have a questionnaire with this person. After that the receiver will be given to someone else who leaves the building. In this way at the end of a day we have routing information of different tours of different people. The use of the receiver is optimal.

# **Participants**

It is preferable when participants live at several places in Oud Charlois. Then a broader area is covered. It is also good to have some diversity in dependency of people, to see whether this has consequences for routing and lifestyle. However the amount of GPS receivers is limited to five. And also time available is limited. With big varieties in location and dependency probably the results are too unique to draw conclusions from it.

Therefore we decide to select two or three locations and people from two different types of living (related to health condition):

Name	Location	Type of living
Waelestein – Verzorgingshuis	1	Nursing home
Waelestein – Woongebouw	1	Assisted living complex
Vlietburg	2	Independent living
(Albatros)	3	Assisted living complex



# Schedule

Because of time needed to analyze the results, we want to finish the research at may 29. The first date to start is may 25, so one week for research. During this week 5 GPS receivers are available. Maybe at Friday 29 more devices are available.

	ate	Building	Number of GPS receivers		
			Lifestyle (day)	Routing (tour)	
mo	25	Waelestein – assisted	5		
tu	26	Waelestein – assisted	1	4	
we	27	Waelestein – nursing	5		
th	28	Waelestein – nursing	1	4	
fr	29	Vlietburg	6	4	

# **Preparations**

Before Monday may 25 the following points have to be done:

- ask for permission to stay in the buildings
- inform individual residents (Vlietburg) about the research, maybe already contact them
- make flyers for people who are interested
- make intake forms
- make questionnaires
- make schedule about dividing tasks between team members

# veldacademie

# Mobility in the picture

Which route do you choose when you go to supermarket? Do you make a detour because of that one road so difficult to cross over? For a good design of public space and a good location of facilities, these are questions that matter. The project 'Mobility in the picture' is on these issues.

'Mobility in the picture' is a survey conducted by the Field Academy. The Field Academy is a studio at the Grondherendijk in Oud Charlois. It is established by the Municipality of Rotterdam in cooperation with Delft Technical University (Faculty of Architecture). The Academy deals with all developments in Oud Charlois.

The purpose of the study is to understand how seniors (55<sup>+</sup>) move through Oud Charlois. Think about things like mapping of fixed routes and walking distances. It also covers the question of understanding which facilities are important for the district.

### **GPS**

To understand travel behaviour, TU Delft has developed a method using GPS technology. For this study this technology is also used. Participants will get a GPS receiver and carry this with them.





The principle of GPS (Global Positioning System) is very simple. Satellites around the earth send signals. These signals are received by the GPS receiver. Using these signals the receiver can calculate the location at which the carrier is located.

For proper operation, the receiver needs signals from at least three satellites. It may be that in a building reception is not optimal and the device does not determine the position.

The devices are set in such a way that every two seconds the calculated position is stored. Afterwards with a computer these data can be read out. This creates an image of the tracking of the carrier.

### Method

If you decide to participate in this survey, you fill out the registration form and get the GPS receiver. The recipient can simply be stored in your jacket or bag. It is important not to lose the receiver. When returning we take back the GPS receiver and ask you some questions about your journey.

# **Privacy**

On the registration form your name and address is listed. This is for the case that the GPS receiver is not returned. However, when the receiver is back in our possession the form is returned to you. So the information from the GPS receiver will remain anonymous.

### Informatie

For more information or for loss of the recipient, please contact: Veldacademie Oud Charlois Grondherendijk 13 3082 DD Rotterdam

Contact with: Carlos Beira (06 14 52 58 46)

Wimco Jelier (06 53 28 19 27)





# Mobility in the picture

ID GPS receiver	ID participant 
Location of distribution :	o Waelestein o Vlietburg
Date : Time of departure :	o Other, namely
Data participant Name	
Phone number	
House number Expected duration of trip	1 hr / 2 hr / 4 hr / day
I got a GPS receiver and dec	clare that I will return this device to the Veldacademie.
Signature participant:	
<b>Return</b> The Veldacademie declares	that the participant returned the GPS receiver.
Signature:	

# Mobility in the picture

ID GPS Receiver ID participant	<del></del>
House number Location	Waelestein / Vlietburg / Other
Date	
Time of departure Time of arrival Weather conditions	rain / strong wind / sun / thunderstorm
vveather conditions	rum / strong wind / sun / thunderstorm

Thank you for participating in this research! This questionnaire is the final part of the research. First we ask you some questions about the trip you just made. After this there are some more general questions. At the end there is an open question for all your tips, questions and comments.

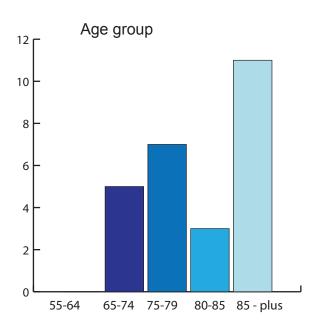
# Questions about the trip you just made

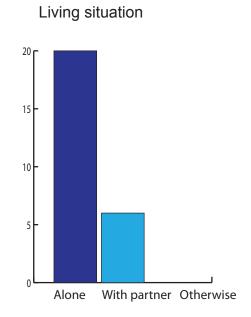
1)	Where did you went to, this trip? (Multiple answers possible)?
	Shopping
	□ Daily shopping
	□ Special shopping
	Family / friends
	Walking / park
	Other ways of leisure (theater, elderly club, book club etc.)
	Doctor / GP etc (care related)
	Work / volunteering work
	Otherwise:
2)	How often you make a trip like this?
	Daily
	Weekly
	Monthly
	Less than once a month
3)	Which transport modes did you use?
	Walking
	□ Independent
	□ With devices (crutches / walker / wheelchair)
	Wheelchair or scooter
	Bike
	Public transport
	Special elderly transportation (Para transit, like neighbourhood bus)
	Car, as a passenger
	Car, as a driver



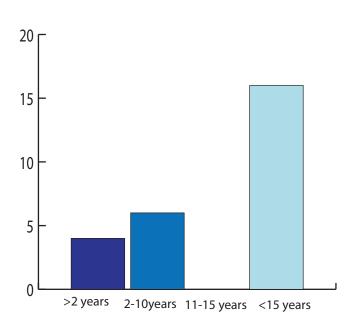
4)	You travelled together with Alone Partner Other family members Friends Professional guiding
5)	When travelling, did you face obstacles or problems?  Like streets which are difficult to cross, a road to busy to bike on it or a pedestrian way without good ramps for a wheelchair.  Few  Normal  Much  Very much
6)	What obstacles did you face and where? You can show them also on a map.
Gene	ral quesions
<b>7)</b>	Gender Male Female
8)	Age 55-64 65-74 75-79 80-85 85-plus
9)	Living situation Alone With partner Otherwise
10)	Type of dwelling Waelestein Woongebouw (independent apartments) Waelestein Zorggebouw (nursing home) Vlietburg Otherwise, my type of living is: independent / service apartment / assisted living building / care home / nursing home

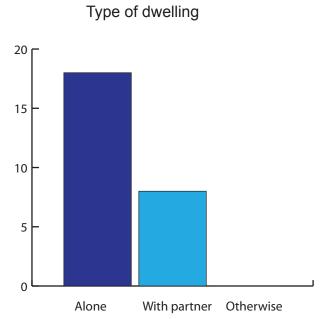
11) 	How often do you make a Daily Weekly	trip in Oud C	harlois?	
	Monthly Less than once a month			
12) 	How often do you make a Daily Weekly Monthly Less than once a month	trip outside	Oud Charlois?	
13)	Which transport modes do	o you use and	I how often?	
	Walking, outside home Wheelchair or scooter Bike Public transport Special elderly transport Car, passenger Car, driver	Daily  □ □ □ □ □ □	Weekly  □ □ □ □ □ □ □ □ □	Monthly
14)	How long do you live in Or Less then 2 years 2 to 10 years 11 to 15 years More then 15 years	ud Charlois?		
15)	Last month, did you use:  Facilities of Wealestein  Hair dresser  Dinner service  Supermarket  Workshops  Pedicure  'hearing doctor'  Optician  Activities in Oud Charlois so  Activities especially			
16) Die	d you participate in this res Yes  No	earch earlier	this week?	
17) An	y questions, comments or	tips?		

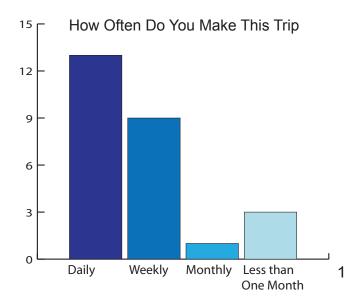




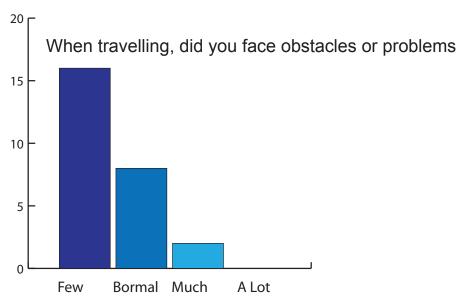
# Duration of stay in Oud Charlois

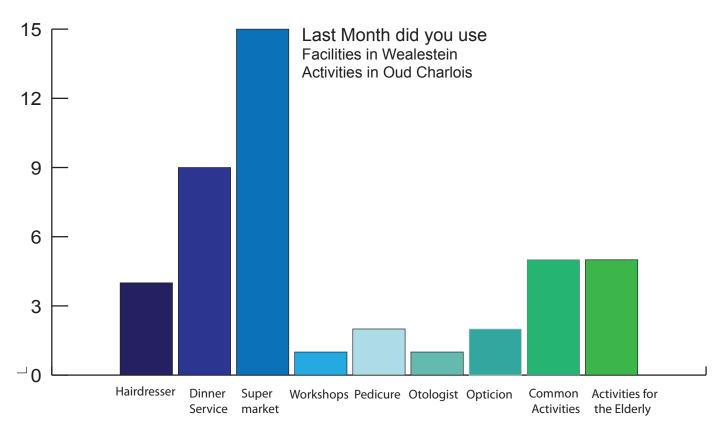






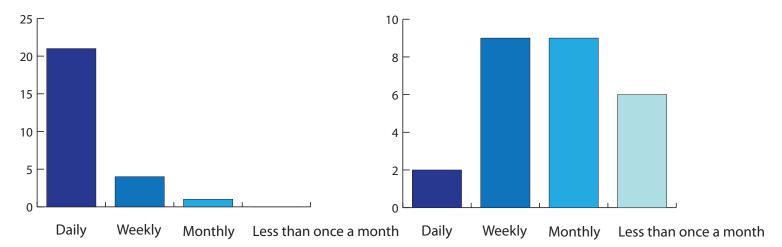


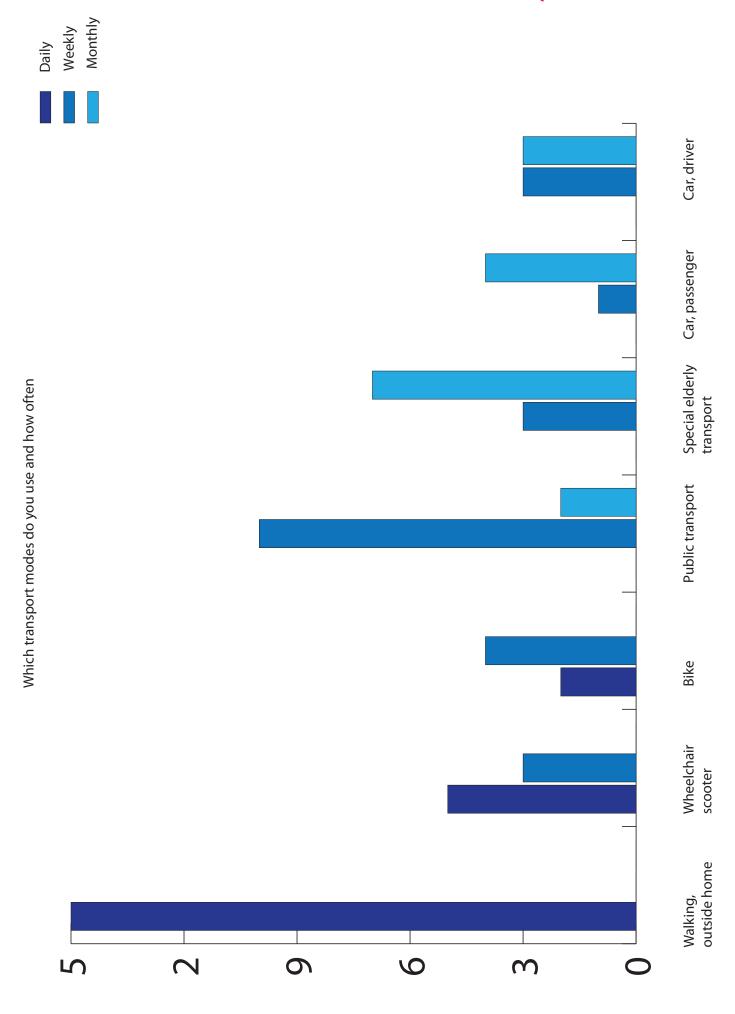




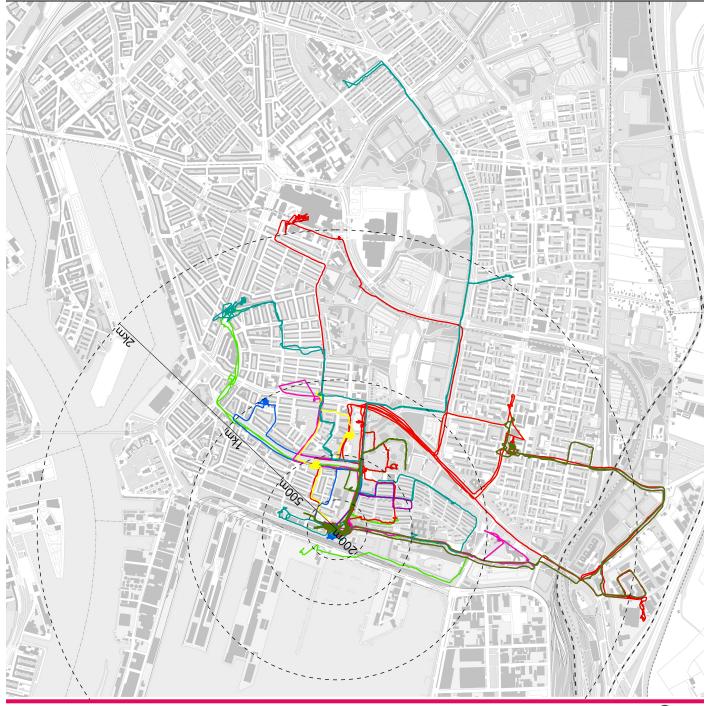
How often do you make a trip in Oud-Charlois

How often do you make a trip outside Oud-Charlois









gend	Purpose of the trip	Number	%
<del>-</del>	Daily shopping	2	18
•	Special shopping	<b>-</b>	4
	Doctor/GP (care related)	2	7
•	Family and Friends	т	10.5
ï	Walking/park	14	20
	Other ways of Leisure	0	0
	Work/volunteering work	0	0
•	Other	м	10.5

Purpose of the trip

Lower Level of Intensity

Low to Medium Level of Intensity

Medium to High Level of Intensity

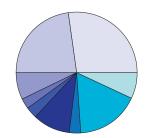
High level of Intensity



Way of transports

# Trip duration maps

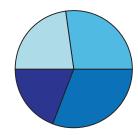
Legend	Types of transport	number	%
	Walking, independen	7	23
	Walking, with devices	8	27
	Wheelchair	2	7
	Scooter	5	17
	Bike	1	3
	Public transport	3	10
	Special elderly transportation	1	6
	Car, as a passenger	1	3
	Car, as a driver	2	7

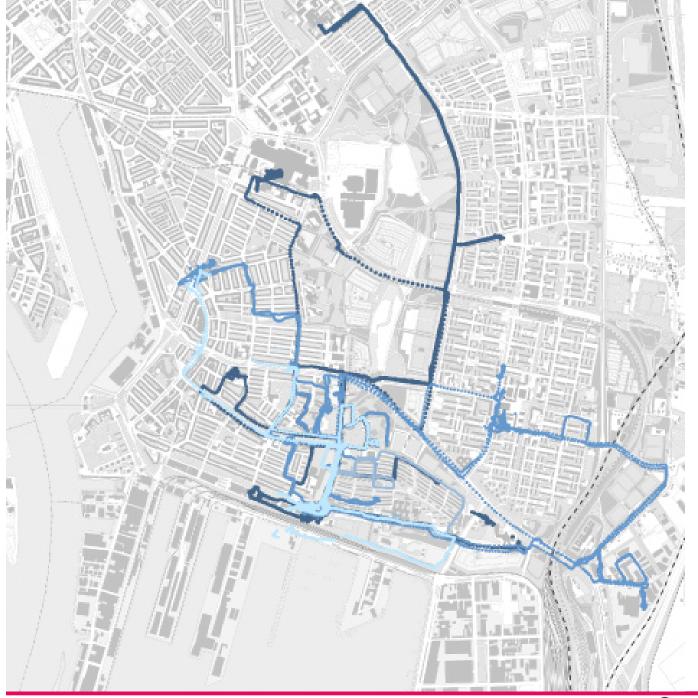


Number	9	7	∞	2
Duration of the Trip	0-30 Min	30 Min- 1 Hour	1Hour- 2 Hours	2 Hours - +2 Hours
Puegend				

23

31





# Conclusion