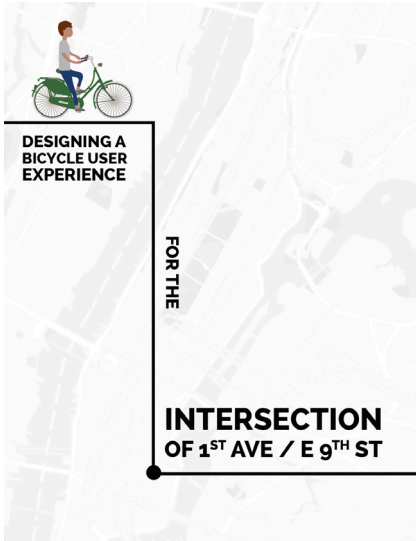


Street Design Report Sample



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STUDY AREA:

Intersection of 1st Avenue & East 9th Street



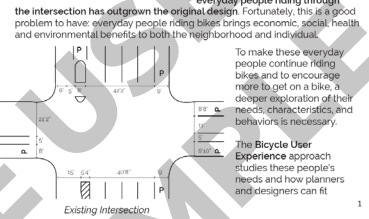
The intersection of East 9th Street and 1st Avenue in the East Village is a bustling area where all different types of people and modes of transportation interact.

In particular there is now a significant amount of people riding a bike through the intersection, using both the northbound protected bike lane on 1st Avenue and the westbound bike lane on 9th Street.

In the past, there were fewer and more skilled riders that could maneuver through car traffic in the mixing zone. It has now reached the point where the number of everyday people riding through the intersection has outgrown the original design. Fortunately, this is a good problem to have: everyday people riding bikes brings economic, social, health and environmental benefits to both the neighborhood and individual.

To make these everyday people continue riding bikes and to encourage more to get on a bike, a deeper exploration of their needs, characteristics, and behaviors is necessary.

The Bicycle User Experience approach studies these people's needs and how planners and designers can fit.



JANE

•East Village resident, 28



What makes her happy?

•Being with her boyfriend and her close friends

Key Goals for a Journey:

- Less worrying, stress and uncertainty
- More simplicity and practicality of her transportation choice

Frustrations with Existing Mobility:

- Walking is simple, but not always fast enough or do-able for long distances
- Trains and buses are often unreliable and owning a car is a hassle and too expensive

Perception of biking as a practice:

- Distant activity that is too complicated and stressful to be a part of her life

Relevant Characteristics

- Wears fashionable clothes, likes to look & feel nice (won't wear lycra or a helmet)
- Does not think much about mobility mode (she just chooses the most practical way to get around)

DAVID

•Goes to school in East Village, 7



What makes him happy?

- Being outside and exploring independently
- Playing with friends

Key Goals for a Journey:

- Safety & Security
- Ability to play with friends and have fun

Frustrations with Existing Mobility:

- He wants to bike around and explore the East Village, but his dad won't let him bike alone because he feels it's unsafe
- Walking feels too slow sometimes

Perception of biking as a practice:

- Fun activity, but not in the street (it only is on the sidewalk or in the park)

Relevant Characteristics

- Not a skilled cyclist (has only been off his training wheels for a few months)

the bike into their lives. Through the lens of human centered design, user experience design, and usability, the approach draws on principles and design methods that have driven the success of problem-solving organizations such as IDEO and multi-billion dollar companies like Google and Apple that have mastered the craft of making widely appealing, irresistible products.

By applying these principles and design methods to street design, we can create bikeways that are safe, comfortable, attractive and enjoyable for people of all walks of life.

The Bicycle User Experience approach engages community members and embeds them in the design while producing extensive process documentation, communication materials and consensus building.

Compared with pushing a street design from a handbook such as MUTCD, AASHTO, NACTO, or CROW, the approach requires minimal time and monetary investment from planning departments while in the long run saving millions of dollars by breaking an effective user-centered design before spending money on expensive implementations and capital projects.



WORKFLOW TO MAKE THE INTERSECTION USABLE FOR EVERYDAY BIKING

CHECKLIST:

HEURISTIC EVALUATION FOR EVERYDAY BIKING

The following questions are referring to everyday people trying to ride a bicycle on the street (not a hardcore or specially trained "cyclist").

Accessibility	Completion	Consistency	Cost-Benefits	Forgiveness	Hierarchy of Needs	Signal to Noise Ratio	User Control	Visibility			
Always	Sometimes	Never	Notes	Always	Sometimes	Never	Notes	Always	Sometimes	Never	Notes
Is the street layout and conditions to ride a bike as by people of all backgrounds?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	outside of mixing zone, generally any bike path disappears at intersection	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	not in mixing zone	<input type="checkbox"/>	<input checked="" type="checkbox"/>	not in mixing zone
Do people of diverse abilities able to use the street without adjustments to their normal life?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	portables	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	not with lane blockage, potholes and mixing zone	<input type="checkbox"/>	<input checked="" type="checkbox"/>	not in mixing zone
Is the physical interface (e.g. street pavement) consistent and easy for everyday people to use throughout the experience of the street?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	portables	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	not with lane blockage, potholes and mixing zone	<input type="checkbox"/>	<input checked="" type="checkbox"/>	not in mixing zone
To the benefit of biking on the street outweigh the costs for the everyday person?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	portables	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	not with lane blockage, potholes and mixing zone	<input type="checkbox"/>	<input checked="" type="checkbox"/>	not in mixing zone
Is the cost/benefit ratio for riding a bike better than that of alternative modes of transportation on the street?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	portables	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	not with lane blockage, potholes and mixing zone	<input type="checkbox"/>	<input checked="" type="checkbox"/>	not in mixing zone
Does the street design clearly and concisely communicate the rules of the street?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	portables	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	not with lane blockage, potholes and mixing zone	<input type="checkbox"/>	<input checked="" type="checkbox"/>	not in mixing zone
Is there no redundant, ineffective signage or markings?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	portables	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	not with lane blockage, potholes and mixing zone	<input type="checkbox"/>	<input checked="" type="checkbox"/>	not in mixing zone
Can people have control of their experience on the street?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	portables	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	not with lane blockage, potholes and mixing zone	<input type="checkbox"/>	<input checked="" type="checkbox"/>	not in mixing zone
Are people able to meet their own personal needs while using the street?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	portables	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	not with lane blockage, potholes and mixing zone	<input type="checkbox"/>	<input checked="" type="checkbox"/>	not in mixing zone
Can the users understand how the street system is working?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	portables	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	not with lane blockage, potholes and mixing zone	<input type="checkbox"/>	<input checked="" type="checkbox"/>	not in mixing zone
At a smaller scale, is the status of street elements that affect people's experience clear?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	portables	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	not with lane blockage, potholes and mixing zone	<input type="checkbox"/>	<input checked="" type="checkbox"/>	not in mixing zone

ARTIFACT ANALYSIS



Artifact Name/Title:

Faded street pavement markings

Describe it (as if you were explaining it to someone who can't see it):

There are pavement markings depicting a crosswalk and bike lane. Parts of these markings and faded away much more than the rest of them.

Understand it: Markings were likely worn down by motor vehicles.

Where is it from? It would be interesting to find out when markings were installed by DOT.

When is it from? It would be interesting to find out when markings were installed by DOT.

Who used it? What was it used for? People walking are supposed to use the crosswalks as a safe space to cross and people on bikes the bike lane a safe place to ride a bike.

Analyze it:

Does it have any functionality that may have been unintended by its designer? The intended functionality by DOT seems to be to let people cross and ride a bike safely. However, it may not always be working exactly as intended.

What can we infer from it with regards to Maslow's Hierarchy of Needs? N/A

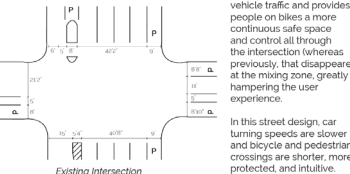
Contextualize it:

What did you find out from this artifact with regards to the street environment? Cars turn this way most of the time and the bike lane is frequently run over by them. Motor vehicle angle for turning is relatively wide (and fast) as revealed by the crosswalk lines. A turn made at closer to 90 degrees would be slower and have better visibility of the people crossing and riding by.

How might you make street design changes that make everyday biking easier and more pleasant based on the insights gained from this artifact? Restrict motor vehicle turning speed and extend physically protected bike and pedestrian space to make it safer and because the desire lines reveal that motor vehicles don't require of the space allocated to them to make the turn.

STREET DESIGN SOLUTIONS

The following street design changes have been developed from the insights gained in the human centered design methods. In the heuristic evaluation, the mixing zone and a general lack of user control were identified as low hanging fruit to address in the redesign, and the artifact analysis confirmed the intrusion of other uses in space intended for people riding bikes. The new street design uses physical separation at the intersection to slow down motor vehicle traffic and provides people on bikes a more continuous safe space and control all through the intersection whereas previously, that disappeared at the mixing zone, greatly hampering the user experience.



In this street design, car turning speeds are slower and bicycle and pedestrian crossings are shorter, more protected, and intuitive. This was done without an expensive major street reconfiguration and should be tested in the short term with temporary materials such as plastic flexible bollards and gravel like in the DOT plaza program. Special care should be taken to make sure that a successful pilot is clearly defined beforehand so that a few loud voices don't drown out the full results.

Proposed Conceptual Design

SITE PHOTOS

