Urban Greenways
User research in Dublin

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Urban Greenways

“The National Transport Authority has developed cycling networks for the Greater Dublin Area and the Regional Cities......These networks include a number of Greenways, which are, in the main, focused on achieving an increase in the numbers commuting to work and education”.

National Greenway Strategy
Greenways in Urban Cycle Network Plans
Greater Dublin Area Cycle Network Greenways

- The GDA Cycle Network Plan
  - 325km Primary routes
  - 400km Secondary routes
  - 200 km Greenway routes
- 48% of the km the Local Authorities are actively developing are Greenways - 78km
- Mix of local routes and strategic routes
Significant variation in Urban Greenway context and character
• Green Route Network Cycle routes developed predominately for **tourist, recreational and leisure** purposes but can **also address everyday trip demand**.

• “Cycle Trails” is identified as a link type and reference is made to pedestrians and cyclists sharing space, but a primary recreation function.

• Shared facilities are **disliked by** both pedestrians and cyclists and result in reduced Quality of Service for both modes.

• Shared facilities might be appropriate in low-density towns and cities, and suburban or **recreational** areas

• Where shared facilities
  • Pedestrians should always have priority, reinforced by signage
  • Sufficient width to facilitate evasive action and/or avoidance of potential conflict
Design Considerations and Stakeholders

“*It is just some tarmac on a towpath why is it taking so long….*”
Research

Video Surveys of 18 urban greenway locations

7676 Users

Speeds and Interactions

In Situ User Experience surveys 6 locations

258 respondents
### Quantitative Research
- 18 locations, 29 Video Surveys

<table>
<thead>
<tr>
<th>Sites</th>
<th>Pedestrians</th>
<th>Cyclists</th>
</tr>
</thead>
<tbody>
<tr>
<td>All 18</td>
<td>2319</td>
<td>5357</td>
</tr>
<tr>
<td>Shared Pedestrian and Cyclists facility (14)</td>
<td>774</td>
<td>1684</td>
</tr>
<tr>
<td>Segregated facility (4)</td>
<td>1545</td>
<td>3673</td>
</tr>
</tbody>
</table>
## Classifying Conflicts

<table>
<thead>
<tr>
<th>Level</th>
<th>Conflict Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Precautionary Action</td>
</tr>
<tr>
<td>2</td>
<td>Controlled Action</td>
</tr>
<tr>
<td>3</td>
<td>Near Miss</td>
</tr>
<tr>
<td>4</td>
<td>Very Near Miss</td>
</tr>
<tr>
<td>5</td>
<td>Collision</td>
</tr>
</tbody>
</table>
Across all sites only 20 of 7676 (0.0026%) users had an observable ‘conflict’ with each other.

80% of those happened at 1 site, which is segregated but acts as shared 323 peds + 1000 cyclists am peak.

All interactions were level 1 conflicts. Precautionary action – users changed course or speed in anticipation of infringement.

Of the other 2 conflicts, 1 was cyclist/cyclist interaction, 1 pedestrian/cyclist interaction.
Cyclists Speeds

CYCLIST SPEEDS

- 85 percentile speed km/hr
- Median Speed km/h
- Poly. (85 percentile speed km/hr)

The diagram shows the cyclists' speeds across different locations, with the 85th percentile speed, median speed, and polynomial fit of the 85th percentile speed represented on the graph.
Speeds

- Across all sites average median speeds weekday 17kph, Saturday 16kph

- Average 85th percentile 21kph

- 2 locations with unsealed surfaces speeds were above the average median and 85% speeds

- East Coast Trail average median (20 kph) and 85th percentile speed (26kph)

- Cycle speed through short shared areas at junctions in East Coast Trail higher than on segregated links however cyclists reduced speeds when pedestrians were present
Cyclists Speeds

Cycle Speeds per type of facility

- Segregated
- Shared
- All

Median Speed km/h
85 percentile speed km/hr
Qualitative Research

- 258 interviews with cyclists and pedestrian
  - Feelings of satisfaction and safety
  - Comparative satisfaction with different types of facilities
  - What improvements could be made.
- To capture incidents of collisions and near collisions
- 2 sites at Ashtown along Royal Canal 5km from city centre
- 4 sites Clontarf East Coast Trail location 2-6km from city centre

A – Shared on a hill
19peds/49 cyclists
am peak

B– Shared on the flat
21 peds/46 cyclists
Clontarf Sites

A – Segregated
59 peds 772 cyclists
am peak

C – Segregated
43 peds 490 cyclists
am peak

B Shared (white line)
323 peds 1003 cyclists
am peak

D Short Shared (30m)
59 peds 424 cyclists am peak
This survey was designed to evaluate user satisfaction with the urban greenway facilities in Clontarf and Ashtown. The survey also aimed to capture incidence of collisions and near collisions, and to gain an understanding of how users feel about:

- The safety of facilities
- Overall condition of facilities
- and what improvements, if any should be made.

Mix of Ages, Gender and User Type

- Cyclists: 60% male, 42% 45+ years, 53% travelling alone
- Pedestrian: 66% female, 58% 45+ years, 41% travelling alone
Frequent users

Frequency of using facility
Base: 258 pedestrians/cyclists

<table>
<thead>
<tr>
<th>Frequency</th>
<th>All Adults</th>
<th>Type of User</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>258</td>
<td>Cyclist Pedestrian</td>
<td>Clontarf Ashtown</td>
</tr>
<tr>
<td>Every day</td>
<td>45%</td>
<td>44%</td>
<td>43%</td>
</tr>
<tr>
<td>2-3 times per week</td>
<td>31%</td>
<td>30%</td>
<td>33%</td>
</tr>
<tr>
<td>Once a week</td>
<td>12%</td>
<td>13%</td>
<td>11%</td>
</tr>
<tr>
<td>Once a fortnight</td>
<td>4%</td>
<td>5%</td>
<td>4%</td>
</tr>
<tr>
<td>Once a month</td>
<td>4%</td>
<td>5%</td>
<td>4%</td>
</tr>
<tr>
<td>Less often</td>
<td>6%</td>
<td>7%</td>
<td>5%</td>
</tr>
</tbody>
</table>
Satisfaction with different elements “at this particular location”
Satisfaction with different elements “at this particular location”

A – Shared on a hill

B – Shared on the flat
Satisfaction with facilities: Cyclists vs. Pedestrians

Average rating out of 10....

- Overall attractiveness (Cyclist: 8.70, Pedestrian: 8.37)
- Width of facility (Cyclist: 8.01, Pedestrian: 8.30)
- Surface quality (Cyclist: 8.66, Pedestrian: 8.38)
- Conduct of others (Cyclist: 7.81, Pedestrian: 7.42)
- Info & waymarking (Cyclist: 7.62, Pedestrian: 7.29)

Satisfaction with safety (Cyclist: 7.85, Pedestrian: 7.77)
Satisfaction with safety at this section (Cyclist: 7.94, Pedestrian: 7.72)
Overall satisfaction (Cyclist: 8.25, Pedestrian: 8.08)
Overall satisfaction with this section (Cyclist: 8.34, Pedestrian: 8.01)

Base: 258 pedestrians/cyclists
Reasons for dissatisfaction at this location

**Respondent feedback**

- Here are some of the verbatims given by our respondents on why they gave a lower satisfaction rating.

> The idea is good, but it's not to the full satisfaction of us pedestrians. We find it difficult to pass when more than one person is on the path. If you have a dog and approach someone pushing a pram, you find someone needs to move onto the cycle path. But if they are cycling at speed, they don’t have enough time to stop.

> The junction at the wooden bridge is very unclear who has right of way. Cyclists think they have right of way to keep going. It’s very poorly organised. I think cyclists go too fast.

> There are a number of places where the cycle path crossed entrances where cyclists should have priority.
Have you ever had a collision

Not Probability

<table>
<thead>
<tr>
<th></th>
<th>All had a collision</th>
<th>Type of User</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Cyclist</td>
</tr>
<tr>
<td>Base:</td>
<td>10</td>
<td>7</td>
</tr>
<tr>
<td>No.</td>
<td></td>
<td>No.</td>
</tr>
<tr>
<td>Pedestrian</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Cyclist</td>
<td>7</td>
<td>4</td>
</tr>
</tbody>
</table>
Near Collision

- Ever had a near collision: Yes 22%, No 78%
- Who nearly collided with:
  - All nearly had a collision: 57% Yes, 43% No
  - Type of user:
    - Cyclist: 31%
    - Pedestrian: 26%
    - Wheelchair user: 2%
    - Other: 4%
Preference for Shared or Segregation by kerb or verge

Base: 258 pedestrians/cyclists

- **Shared space**
  - **All Adults**
    - 258 (%)
    - 29 in Shared space (%)
  - **Location**
    - Clontarf: 202 (%), Ashtown: 56 (%)
    - 22 in Clontarf (%), 55 in Ashtown (%)

- **Be separated by a verge or kerb**
  - **All Adults**
    - 71 (%)
    - 78 in Be separated by a verge or kerb (%)
  - **Location**
    - Clontarf: 69 (%), Ashtown: 72 (%)
    - 31 in Clontarf (%), 28 in Ashtown (%)
Reasons for Preference

Cyclists who had a preference for sharing with Pedestrians

“It works”

“I just don't think it necessary to separate us, it will be narrow”

“takes up less green area”

“If you're careful its fine for everyone”

“easier to provide the facility”
What would you most like to see?

- A verge or kerb separating cyclists and pedestrians: Most like to see 26%, Any like to see 43%
- A wider facility: Most like to see 14%, Any like to see 33%
- More measures to reduce cyclist speed: Most like to see 12%, Any like to see 27%
- An understood rule that all users should keep to the left: Most like to see 12%, Any like to see 47%
- More signage on how to use the path: Most like to see 10%, Any like to see 37%
- An understood rule that certain users should use the facility at certain times, e.g. dog walkers and sport cyclists: Most like to see 2%, Any like to see 13%
- Other: Most like to see 13%, Any like to see 16%
- None of these: Most like to see 12%, Any like to see 12%
Frequency when walking or cycling on this facility

Listen to Headphones

Text or Scroll

Stop and Chat
Emerging Conclusions

- Level of observed interactions between 7373 cyclists and pedestrians extremely rare 0.026%
- Across all 18 Locations 5357 cyclists – average median speed 16kph, average 85%tile speed 21kph
- Cyclists travel a little faster on segregated facilities
- Cyclists don’t slow just because surface material changes to concrete and shared area signage
- Cyclists slow speeds in presence of pedestrians in shared areas
Emerging Conclusions

• All locations achieved a satisfaction rating of approx. 80% +/- 5%

• Expressed preference for shared or segregated varies by location and correlates to user numbers

• The most popular improvement was “an understood rule that all users should keep to the left”, followed by segregation

• However segregation was the improvement people would most like to see

• 63% of pedestrians and 57% of cyclists interviewed stop and chat at least sometimes
Go Raibh Mile Maith Agaibh

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