Sustainable mobility planning on university campuses in the Mediterranean region: Lessons learned from the CampSUMP project

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Project Overview
CAMP-sUmp: CAMPus sustainable University mobility plans in MED Areas

- **Type of Programme**: Interreg Med Programme
- **Priority Axis 2**: Low Carbon Economy – Fostering low carbon strategies and energy efficiency in specific MED territories: cities, islands and remote areas
- **Specific Objective 2.3**: To increase capacity to use existing low carbon transport systems and multimodal connections among them
- **Project Budget**: € 545,150.00 (ERDF Fund (85%) 463,377.50)
- **Duration**: 18 Months (10/11/2016 – 30/04/2018)
- **Project Partners**: Magna Graecia Foundation, National Technical University of Athens, University of Bologna, University of Cyprus, University of Malta, University of Spit, University of Valencia.
CAMP-sUmp: Description

- **Scope:** to improve sustainable urban mobility planning instruments, with innovative strategies for University Campus student flows in European Mediterranean Regions.

- **Aims:**
  - Increase awareness of decision makers about current mobility in university areas and its interconnection with mobility planning
  - Improve capacity of public administration on sustainable mobility planning in University Campuses
  - Improve the management of mobility in the University and the city in a unique integrated planning.

- Project’s main **results** are the definition of a common strategy in Mediterranean northern sea basin regions, that integrates students flow in urban mobility planning with support of ICT instrument model and reduction of negative externalities on urban areas and Campus caused by student flows.

- **Products:**
  - Action Plan for a Sustainable University Mobility Plan inside and outside urban context
  - Roadmap model for Sustainable University Mobility Plans
  - ICT Instrument model for Sustainable University Mobility Plans
<table>
<thead>
<tr>
<th></th>
<th>PROJECT RELEVANCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>First EU-MED comparative study on University mobility</td>
</tr>
<tr>
<td>2</td>
<td>Heterogeneous sample of MED Universities</td>
</tr>
<tr>
<td>3</td>
<td>Deployment of knowledge sharing processes</td>
</tr>
<tr>
<td>4</td>
<td>Transnational impact in the application of a common methodology</td>
</tr>
<tr>
<td>5</td>
<td>Concrete tools for planning University mobility</td>
</tr>
</tbody>
</table>
CAMP-sUmp: Work Plan

- **WP0: Preparation Costs (11/2016 – 11/2016)**
  - Development of project proposal, submission of application form

- **WP1: Project Management (11/2016 – 04/2018)**
  - Overall management structure to achieve project objectives

  - Internal communication within partners as well as external communication of project results and achievements towards main outlined target

  - Framework analysis. Outputs:
    - Output 3.2: ACTION PLAN
    - Output 3.3: Roadmap Model
    - Output 3.4: ICT instrument model
<table>
<thead>
<tr>
<th>Work Package</th>
<th>Duration</th>
<th>Activity</th>
<th>Deliverables</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>WP0: Preparation Costs</td>
<td>11/2016 – 11/2016</td>
<td>A.0.1: Preparing and Submitting a project proposal</td>
<td>D.0.1.1: Application Form</td>
<td>Completed</td>
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<tr>
<td>WP1: Project Management</td>
<td>11/2016 – 04/2018</td>
<td>A.1.1: Project Management (Administrative and financial) and partnership coordination</td>
<td>D.1.1.1: Set up of Management Structure</td>
<td>Completed</td>
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<td></td>
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<td>D.1.1.2: Partnership Agreement</td>
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<td></td>
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<td>D.1.1.3: Project Partner and Steering Committee Meetings</td>
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<td>D.1.1.4: Certifications of Expenditure</td>
<td>Completed</td>
</tr>
<tr>
<td></td>
<td></td>
<td>A.1.2: Project Quality Management</td>
<td>D.1.2.1: Project Quality Plan</td>
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<tr>
<td></td>
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<td>A.1.3: Project Evaluation</td>
<td>D.1.3.1: Evaluation Plan</td>
<td>Completed</td>
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<td>D.1.3.2: Customized Technical Monitoring Form</td>
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<td>D.1.3.3: Risk assessment and contingency plan</td>
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## Work Progress – WP2: Project Communication

<table>
<thead>
<tr>
<th>Work Package</th>
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<th>Activity</th>
<th>Deliverables</th>
<th>Status</th>
</tr>
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<tbody>
<tr>
<td></td>
<td></td>
<td>A.2.2: Communication Strategy</td>
<td>D.2.2.1: Elaboration of the Communication Plan</td>
<td>Completed</td>
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<tr>
<td></td>
<td></td>
<td>A.2.3: Networking Actions</td>
<td>D.2.3.1: Camp-sUmp stakeholders Forum</td>
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<td></td>
<td></td>
<td></td>
<td>D.2.3.2: Local Working Group</td>
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</tr>
<tr>
<td></td>
<td></td>
<td>A.2.4: Information Instruments</td>
<td>D.2.4.1: Press releases and Articles</td>
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</tr>
<tr>
<td></td>
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<td>D.2.4.2: Projects Portrait</td>
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<td></td>
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<td>D.2.4.3: Social Media</td>
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<td>D.2.4.4: Roll-up</td>
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<td>D.2.4.5: USB</td>
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<td></td>
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<td>D.2.4.6: Emailing</td>
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<td></td>
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<td></td>
<td>D.2.4.7: Press Conference</td>
<td>Completed</td>
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<td></td>
<td></td>
<td></td>
<td>D.2.4.8: Posters</td>
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</table>
## Work Progress – WP2: Project Communication (Cont.)

<table>
<thead>
<tr>
<th>Work Package</th>
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<th>Activity</th>
<th>Deliverables</th>
<th>Status</th>
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</thead>
<tbody>
<tr>
<td>WP2: Project Communication</td>
<td>11/2016 – 04/2018</td>
<td>A.2.5: Public Events</td>
<td>D.2.5.1: Public Events</td>
<td>Not Started</td>
</tr>
<tr>
<td></td>
<td></td>
<td>A.2.6: Horizontal project communication</td>
<td>D.2.6.1: Information data to Horizontal projects</td>
<td>Completed</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>D.2.6.2: Participation to horizontal projects events</td>
<td>Completed</td>
</tr>
<tr>
<td></td>
<td></td>
<td>A.2.7: Communication with MED Program</td>
<td>D.2.7.1: Information and Data to program</td>
<td>Completed</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>D.2.7.2: Participation to program events</td>
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</tr>
<tr>
<td></td>
<td></td>
<td>A.2.8: External Event participation</td>
<td>D.2.8.1: Participating to external events</td>
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</tbody>
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## Work Progress – WP3: Studying

<table>
<thead>
<tr>
<th>Work Package</th>
<th>Duration</th>
<th>Activity</th>
<th>Deliverables</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>A.3.2: Data Collection, interview and survey</td>
<td>D.3.2.1: Quantitative Data</td>
<td>Completed</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>D.3.2.2: Qualitative Information</td>
<td>Completed</td>
</tr>
<tr>
<td></td>
<td></td>
<td>A.3.3: Framework Analysis</td>
<td>D.3.3.1: SWOT Analysis</td>
<td>Completed</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>D.3.3.2: Gap Analysis</td>
<td>Completed</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>D.3.3.3: State of the Art</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>A.3.4: Action Plan</td>
<td>D.3.4.1: Action Plan of Sump in Urban Area</td>
<td>Completed</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>D.3.4.2: Action Plan of Sump outside Urban Area</td>
<td>Completed</td>
</tr>
<tr>
<td></td>
<td></td>
<td>A.3.5: Tools and Method for sustainable mobility of University Campus</td>
<td>D.3.5.1: Roadmap for Decision makers</td>
<td>Completed</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>D.3.5.2: ICT Tools model</td>
<td>Completed</td>
</tr>
<tr>
<td></td>
<td></td>
<td>A.3.6: Knowledge Diffusion</td>
<td>D.3.6.1: Public technical joint event for knowledge diffusion reports</td>
<td>Completed</td>
</tr>
</tbody>
</table>

**Outputs**
Project Results
## WP2: Project Communication Achievements

### WWW
- Website
- Social Media:
  - Facebook page
  - Twitter account
  - YouTube channel
- Forum
- Newsletter

### PRESS
- 3 press conferences
- 17 press releases
- 38 articles

### EVENTS
- 12 LWG (about 150 Stakeholders)
- 3 Public events
- 6 Horizontal events
- Project’s information materials

[https://camp-ump.interreg-med.eu/](https://camp-ump.interreg-med.eu/)
### WP3: Overview

<table>
<thead>
<tr>
<th>ACTIONS</th>
<th>OUTPUTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data collection, interview and survey</td>
<td>Quantitative data</td>
</tr>
<tr>
<td></td>
<td>Qualitative information</td>
</tr>
<tr>
<td>Framework analysis</td>
<td>SWOT Analysis</td>
</tr>
<tr>
<td></td>
<td>GAP Analysis</td>
</tr>
<tr>
<td></td>
<td>State of the art</td>
</tr>
<tr>
<td>Action plan</td>
<td>Action plan of SUMP inside urban area</td>
</tr>
<tr>
<td></td>
<td>Action plan of SUMP outside urban area</td>
</tr>
<tr>
<td>Tools and method for sustainable mobility of University campus</td>
<td>Roadmap for decision makers</td>
</tr>
<tr>
<td></td>
<td>ICT tools model and requirements for communication between different actors and planning instruments</td>
</tr>
</tbody>
</table>
WP3: Studying

• **D.3.2.1: Quantitative Data**
  • The objective of this Deliverable was to collect Quantitative Data on local level concerning mobility of students’ flows in campus areas. For this purpose a Questionnaire was developed for each University participating in the project.
  • The Questionnaire included questions on current mobility, desired mobility, mobility problems, proposed measures/ policies/tools and participant information.
  • In total, 1,090 questionnaires were collected:

<table>
<thead>
<tr>
<th>University</th>
<th>Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>University of Catanzaro</td>
<td>104</td>
</tr>
<tr>
<td>National Technical University of Athens</td>
<td>124</td>
</tr>
<tr>
<td>University of Malta</td>
<td>250</td>
</tr>
<tr>
<td>University of Valencia</td>
<td>327</td>
</tr>
<tr>
<td>University of Split</td>
<td>100</td>
</tr>
<tr>
<td>University of Cyprus</td>
<td>85</td>
</tr>
<tr>
<td>University of Bologna</td>
<td>100</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>1,090</strong></td>
</tr>
</tbody>
</table>
D.3.2.1: Quantitative Data – University of Cyprus

• How important do you consider the following criteria for selecting mode of transport?

**From/To Campus**
- **Trip Information through ICT applications**: 3.76
- **Healthy**: 4.20
- **Environmental friendly**: 3.90
- **Comfort**: 4.36
- **Cleanness of transport mode**: 3.07
- **Number of transfers**: 3.98
- **Safety**: 4.51
- **Reliability**: 4.35
- **Walking duration / distance**: 4.15
- **Trip cost**: 4.27
- **Trip duration**: 4.62

**Inside Campus**
- **Trip Information through ICT applications**: 3.22
- **Healthy**: 4.11
- **Environmental friendly**: 3.92
- **Comfort**: 3.78
- **Cleanness of transport mode**: 3.23
- **Number of transfers**: 3.08
- **Safety**: 3.97
- **Reliability**: 3.64
- **Walking duration / distance**: 3.98
- **Trip cost**: 3.29
- **Trip duration**: 4.05
D.3.2.1: Quantitative Data – Synthesis Results

Mode of Transport

Results from all the Universities, indicated that passenger car is the preferable mode of transport in campuses located outside urban areas regardless of the trip duration.

For Campuses inside the city the percentage of walking and cycling is significantly higher.
D.3.2.1: Quantitative Data – Synthesis Results

Mobility Problems

For Campuses located outside urban areas, public transport is the key mobility problem.

On the other hand, for campuses located inside the cities, parking management is considered to be the key mobility problem.
Measures

For Campuses located outside urban areas, measures should be taken with focus on public transport and soft modes such as walking and cycling (infrastructure).

On the other hand, for campuses located inside the cities, measures should be taken with emphasis on walking as well as the environment.
D.3.2.1: Quantitative Data – Synthesis Results

Evaluation of measures/policies/tools

“How important do you consider the following measures/policies/tools regarding mobility from / to your Campus in a scale from 1 (not important) to 5 (very important)“

For campuses located inside urban area, the most important measures include 4 thematic areas as follows:
- Walking - Safety on crossing
- Walking - Pedestrian network
- Public transport - Increase frequencies
- Public transport - Improve the density and extent of the public transport network
- Public transport - Actions to improve comfort
- Road Infrastructure - Infrastructure regarding disabled people
- Road Infrastructure - Signage and road markings
- Road Infrastructure - Pavement maintenance
- Environment and Energy - Use of clean vehicle technologies

For campuses located outside urban area, the most important measures include:
- Public transport - Increase frequencies
- Public transport - Coordination (intermodality transport)
- Public transport - Improve the density and extent of the public transport network
- Road Infrastructure - Infrastructure regarding disabled people
- Public transport - Actions to improve comfort
- Road Infrastructure - Signage and road markings
- Walking - Safety on crossing
- Public transport - ICT tools to improve information to passengers
- Environment and Energy - Use of clean vehicle technologies
- Walking - Pedestrian network
- Road Infrastructure - Pavement maintenance
• **D.3.2.2: Qualitative Data**
  • The objective of this Deliverable was to collect Qualitative information regarding the state of the art of mobility inside the Campus and related urban mobility, services and policies of students’ mobility and sustainable mobility planning instruments.
### D.3.2.1: Qualitative Data – University Comparisons

#### Comparison between Universities

<table>
<thead>
<tr>
<th>University</th>
<th>Location</th>
<th>Students</th>
<th>Personnel</th>
<th>Area (m²)</th>
<th>Mobility From/To campus</th>
<th>Mobility Inside campus</th>
<th>Mobility plan</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 University of Catanzaro</td>
<td>Outside</td>
<td>11,000</td>
<td>500</td>
<td>260,000</td>
<td>Train, Bus, Car</td>
<td>Car, Walking</td>
<td>No</td>
</tr>
<tr>
<td>2 National Technical University of Athens</td>
<td>Outside</td>
<td>13,500</td>
<td>3,400</td>
<td>1,000,000</td>
<td>Metro, Bus, Car</td>
<td>Bus, Car, Bicycle, Walking</td>
<td>Yes</td>
</tr>
<tr>
<td>3 University of Malta</td>
<td>Inside</td>
<td>11,500</td>
<td>600</td>
<td>195,000</td>
<td>Bus, Car, Motorcycle, Bicycle, Walking</td>
<td>Car, Motorcycle, Bicycle, Walking</td>
<td>Yes</td>
</tr>
<tr>
<td>4 University of Valencia (1 campus)</td>
<td>Outside</td>
<td>10,000</td>
<td>2,000</td>
<td>1,000,000</td>
<td>Tram, Bus, Car, Bicycle</td>
<td>Tram, Walking</td>
<td>Yes</td>
</tr>
<tr>
<td>5 University of Valencia (2 campuses)</td>
<td>Inside</td>
<td>35,000</td>
<td>5,000</td>
<td>400,000</td>
<td>Metro, Bus, Bicycle, Walking</td>
<td>Walking</td>
<td>Yes</td>
</tr>
<tr>
<td>6 University of Split</td>
<td>Inside</td>
<td>24,000</td>
<td>1,500</td>
<td>245,000</td>
<td>Ferry, Train, Bus, Car, Motorcycle</td>
<td>Car, Motorcycle, Bicycle, Walking</td>
<td>No</td>
</tr>
<tr>
<td>7 University of Cyprus</td>
<td>Outside</td>
<td>7,000</td>
<td>1,100</td>
<td>1,200,000</td>
<td>Bus, Car</td>
<td>Car, Bicycle, Walking</td>
<td>Yes</td>
</tr>
<tr>
<td>8 University of Bologna</td>
<td>Outside</td>
<td>85,000</td>
<td>3,000</td>
<td>6,570,000</td>
<td>Train, Bus, Car</td>
<td>Bicycle, Walking</td>
<td>Yes</td>
</tr>
</tbody>
</table>
D.3.2.1: Qualitative Data – Stakeholders

- In all partners’ campuses, **students** and **employees** were the most critical stakeholders for each campus. The importance of visitors to the campus mobility situations has been also highlighted, but with a secondary focus. A special case of stakeholder has been revealed in the case of Split and relates to the residents that live in buildings which are located within the geographical scope of the Urban Development Plan of the University campus.

- In relation to the **decision makers**, findings show that both local and regional authorities are usually involved in each mobility campus plan. Interestingly, only University of Malta and University of Valencia have a mobility committee/entity in the University in charge of designing and implementing mobility policies. Public transport authorities are also involved in all campuses mobility plans.
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D.3.2.1: Qualitative Data – Mobility Policies and Tools

• Car sharing, as well as bike related programs are the most common practices implemented in Universities in the Mediterranean
WP3: Studying

D.3.3.1: SWOT Analysis

The objective of this Deliverable was the implementation of a SWOT (strengths, weaknesses, opportunities, and threats) analysis based on a questionnaire survey on experts. The analysis aims to reveal the current situation of mobility flows in campus areas and sustainable mobility planning instruments, as SUMPs, applied to existing campus mobility planning.

For this purpose, a minimum of 3-5 experts per university was set while the ideal mix of participants was set as follows:

- University mobility/planning manager, if such professional figure exists;
- At least 2 technical representatives of local, regional and national public institutions
- At least 1 member from Associated Partners
- The project Manager
D.3.3.1: SWOT Analysis – University of Cyprus

- For the purpose of the present report, 8 experts completed the SWOT analysis for the University of Cyprus: (a) the mobility officer of the University Campus; (b) the Chamber Representative; (c) 3 mobility experts from the Department of Public Works of the Ministry of Transportation, Communications and Works; (d) a University employee; (e) a University student; and (f) a Professor and the director of an International Research Centre.
D.3.3.1: SWOT Analysis – University of Cyprus

| Strengths | • New Campus with a small size and therefore easily manageable  
• Will for development and promotion of alternative solutions, as well as willingness to observe and satisfy the needs of the Academic Community  
• A well-established academic institution with good reputation  
• Ability to set high goals and achieve them |
| Weaknesses | • Car-oriented culture  
• Lack of mobility management policies at the Campus  
• Limitations in the capabilities of the University of Cyprus (due to the size of the Campus, lack of staff)  
• Time and bureaucracy – complexity in communication between different involved bodies |
| Opportunities | • The Campus is new and at the phase of further development therefore there are opportunities to plan for new and innovative ideas  
• Funding and technological solutions are available  
• New mobility plan under study  
• The University’s policies are in accordance to the national policies as well as EU policies  
• The University opts for value-for-money policies |
| Threats | • Sustainable mobility is not actively promoted as a lifestyle at a national level, rather the population is heavily car-dependent  
• Limitation of the State’s abilities to support certain requirements of the University  
• High cost of development, deployment and maintenance |
**D.3.3.1: SWOT Analysis – Synthesis Results**

Results are very interesting and indicate several issues that exist for most of Universities. More specifically, the most common strength is proved to be the high level of knowledge and expertise within university members. On the other hand, an interesting finding is that one of the most common weakness is the lack of funds for soft modes measures.

<table>
<thead>
<tr>
<th>Strengths</th>
<th>University of Calabria</th>
<th>National Technical University of Athens</th>
<th>University of Malta</th>
<th>University of Verona</th>
<th>University of Split</th>
<th>University of Cyprus</th>
<th>University of Bologna</th>
</tr>
</thead>
<tbody>
<tr>
<td>Well located in the city and easily accessible</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Infrastructure for active traveling (bicycle, walk)</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Ability to leverage the existing transportation</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>High level of knowledge and expertise within University members</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Large capacities for Planning mobility</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>New infrastructure that can integrate towards sustainable solutions</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Accessibility cars is not affected by traffic</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Possibility of active travelling for mobility inside the campus</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Weaknesses</th>
<th>University of Calabria</th>
<th>National Technical University of Athens</th>
<th>University of Malta</th>
<th>University of Verona</th>
<th>University of Split</th>
<th>University of Cyprus</th>
<th>University of Bologna</th>
</tr>
</thead>
<tbody>
<tr>
<td>City’s traffic congestion leads to reduced campus Accessibility</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Lack of travel modes and/or connections</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Insufficient development of ICT tools linked to campus operations</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Lack of coordination between university activities and city Demand evolution</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Organizational barriers (Lack of mobility, office)</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Lack of funds for soft measures</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
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<table>
<thead>
<tr>
<th>Opportunities</th>
<th>University of Calabria</th>
<th>National Technical University of Athens</th>
<th>University of Malta</th>
<th>University of Verona</th>
<th>University of Split</th>
<th>University of Cyprus</th>
<th>University of Bologna</th>
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<tbody>
<tr>
<td>Possibility of financing from EU for sustainable</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
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<tr>
<td>Demand for the involvement of private sector</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
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<tr>
<td>University can be a faster for sustainable</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
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<tr>
<td>Integrated ICT tools</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Reduce car use and traffic congestion</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
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</table>

<table>
<thead>
<tr>
<th>Threats</th>
<th>University of Calabria</th>
<th>National Technical University of Athens</th>
<th>University of Malta</th>
<th>University of Verona</th>
<th>University of Split</th>
<th>University of Cyprus</th>
<th>University of Bologna</th>
</tr>
</thead>
<tbody>
<tr>
<td>Financial constraints</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Need for significant funding to support</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Inefficient bureaucracy</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Resistance to change</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Difficulty to establish a viable cooperation</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Dependence on political will</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>
D.3.3.1: SWOT Analysis – Synthesis Results for Campuses inside urban areas

**Campus Mobility inside urban areas**

- Well located in the city and easily accessed by public transport
- Infrastructure for active traveling (bicycle, walk etc)
- Ability to leverage the existing transportation network and city’s mobility solutions
- High level of knowledge and expertise within University members

- City’s traffic congestion leads to reduced campus accessibility
- Lack of travel modes and/or connections to support the last mile
- Insufficient development of ICT tools linked to campus operations
- Lack of coordination between university activities and city demand evolution
- Organizational barriers (Lack of mobility office)
- Lack of funds for soft measures

- Financial constraints
- Need for significant funding to support mobility policies, which the existing demand may not justify
- Inefficient bureaucracy
- Resistance to change
- Difficulty to establish a viable cooperation and engagement of stakeholders
- Dependence on political will

- Possibility of financing from EU for sustainable solutions
- Demand for the involvement of private sector
- University can be a tester for sustainable mobility in the city center
- Integrated ICT tools
- Reduce car use and traffic congestion

Interreg Mediterranean
Project co-financed by the European Regional Development Fund

CAMP-sUmp
D.3.3.1: SWOT Analysis – Synthesis Results for Campuses outside urban areas

**Strengths**
- Large capacities for Planning mobility
- New infrastructure that can intergrade towards sustainable solutions (buildings, parking spaces, internal road network etc.)
- Accessibility cars is not affected by traffic
- Possibility of active travelling for mobility inside the campus
- High level of knowledge and expertise within University members
- Possibility of financing from EU for sustainable solutions
- Demand for the involvement of private sector
- University can be a leader in sustainable mobility plans
- The construction of new connections with the city center will benefit the socio-economic development of the entire area surrounding the campus
- Integrated ICT tools
- Promotion of car sharing

**Weaknesses**
- Car dependent mobility
- Insufficient development of ICT tools linked to campus operations
- Need for significant funds for infrastructure and mobility policies and tools
- Organizational barriers (Lack of mobility office)
- Financial constraints - Need for significant funding to support mobility policies, which the existing demand may not justify
- Inefficient bureaucracy
- Resistance to change
- Difficulty to establish a viable cooperation and engagement of stakeholders
- Dependence on political will

**Opportunities**
- New infrastructure that can intergrade towards sustainable solutions (buildings, parking spaces, internal road network etc.)
- Accessibility cars is not affected by traffic
- Possibility of active travelling for mobility inside the campus
- High level of knowledge and expertise within University members
- Possibility of financing from EU for sustainable solutions
- Demand for the involvement of private sector
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- Integrated ICT tools
- Promotion of car sharing

**Threats**
- Car dependent mobility
- Insufficient development of ICT tools linked to campus operations
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- Financial constraints - Need for significant funding to support mobility policies, which the existing demand may not justify
- Inefficient bureaucracy
- Resistance to change
- Difficulty to establish a viable cooperation and engagement of stakeholders
- Dependence on political will

Mobility for Campus outside urban areas

Project co-financed by the European Regional Development Fund
WP3: Studying

**D.3.3.2: GAP Analysis**
- The objective of this Deliverable was the presentation of the gap analysis that was implemented based on the qualitative data that were collected.
- The present work includes 36 Interviews from the seven Universities
- The thematic areas studied included:
  - Parking management
  - Soft modes Infrastructure
  - Public transport
  - Car related issues
  - Road infrastructure
  - Environment and energy
  - Mobility management
  - Freight Infrastructure and Management
  - Information and communications technology (ICT) tools
  - Sustainable Urban Mobility Plans (SUMPs)
D.3.3.2: GAP Analysis – University of Cyprus

From/To Campus

Inside Campus

Project co-financed by the European Regional Development Fund

CAMP-sUmp
D.3.3.2: GAP Analysis – Synthesis Results

Urban Areas

Outside Urban Areas

MED Campus Inside Urban Areas

- From/To Campus Mobility
- Inside Campus Mobility

MED Campus Outside Urban Areas

- From/To Campus
- Inside Campus
Project Outputs
Project Outputs: Overview

**Action plan**
Action plan of SUMP inside urban area  
Action plan of SUMP outside urban area

**Tools and methods for sustainable mobility of University campus**
Roadmap for decision makers  
ICT tools model and requirements for communication between different actors and planning instruments
Project Outputs: Overview

**Action plan**
Action plan of SUMP inside urban area
Action plan of SUMP outside urban area

**Tools and methods for sustainable mobility of University campus**
Roadmap for decision makers
ICT tools model and requirements for communication between different actors and planning instruments
Deliverables D3.4.1 and D3.4.1: Action plan of sUmp

1. Study
   1.1 Decarbonisation and Air Quality
   1.2 Local Geographical Area Dynamics
   1.3 Demographic Challenges
   1.4 Digital Society
   1.5 Sharing Economy

2. Plan
   2.1 Stakeholder Identification and Involvement
   2.2 Definition of Goals, KPIs, Actions' Prioritising
   2.3 Community Communication and Involvement
   2.4 Hints about Plan's Actions

3. Do
   3.1 Plan's Implementation

4. Check-Act
   4.1 KPIs Evaluation
   4.2 Corrective Actions
   4.3 Dissemination of Results

D.3.4.1: Action Plan for sUmp for University Campuses located in the Urban Areas

D.3.4.2: Action Plan for sUmp for University Campuses located outside Urban Areas

→ The two Action Plans share the same methodology but differentiate between:
1. Decarbonisation and air quality
2. Local Geographical Area Dynamics
3. Demographic Challenges
4. Digital Society
5. Sharing Economy
6. Stakeholder Identification and Involvement
7. Hints about plans actions
Deliverable D3.5.1: Roadmap for decision makers

Ready-to-use guide for the implementation of the Action Plan in University Campus with different settings, characteristics and in MED countries.

Two Roadmaps were developed:

• Strategic Roadmap
• Progressive Roadmap

→ The Roadmaps are customizable to the needs of each University
  • An example is already filled in and an empty template is also given
# Strategic Roadmap for Sustainable Mobility Plan in the University

## Context
- One Campus inside the City
- One Campus outside the Urban area
- About 30,000 users.
- The road and accesses are not safety enough for walking and cycling.
- Public transport: Deficient and expensive.
- Inadequate Parking inside the city.
- In the city there is congestion and pollution.
- Too many users use private transport and drive alone.
- There is no demand to go by bike.
- Carpool is used but there is no an own service of the University
- There are no Mobility ICT platforms.
- There is no a Mobility office

## Target
- 15% reduction of journeys to/from Uni by car
- 30 km/h Speed Limit in accesses and within the Campus
- 2% carpool app registers
- 0.5% have ever used carpool
- 1% reduction in parking use
- 10% increase of walking commute (who live up to 2 km).
- 5% increase in bicycle commute (who live between 2 and 5 km).
- 5% increase in pedestrian areas within campuses
- 5% increase in public transport commute (of those who live in the districts)
- Reducing emissions and the ecological footprint

## 2018
- Defining a Mobility team: Agreements. Looking for funds and grants, Mobility Guide.
- Traffic calming, signage, information, pavements and lightening improvements.
- Universal Accessibility improvements. Towards the most sustainable fleet.
- Integral platform design. Deal for Sustainable Mobility. Communication. Alerts, Keywords.

## 2020
- Awareness and Incentives Program. Assessment Sustainable Mobility Office
- Increasing 20-30 areas Conditioning of accesses Connectivity between buildings
- Most Sustainable University fleet
- Multimodal and integral platform Route planning Integrated transport card

## 2025
- Awareness, Sustainable Mobility analysis. Monitoring and Evaluation of the Plan
- Improvement and adaptation of the Campus infrastructure needs.
- Most Sustainable University fleet
- Multiple platform app improvement, payments. Fostering, awareness

## 2030
- 25% maximum that use car to/from the campus (EU=50%).
- 30% carpool app registers
- 15% have ever used carpool
- 30% reduction in parking use
- 30% increase of walking
- 25% increase of cycling
- 15% increase pedestrian areas within campuses
- 15% increase in public transport commute
- 5% increase of low carbon vehicles
- 30% reduction the average of travel time by public transport
- 20% reduction CO2 emissions
- Reduce 65 decibels
- 30% reduction of the traffic accident victims in community
### Progressive RoadMap

**Cycling**

<table>
<thead>
<tr>
<th>Area</th>
<th>Actions/Milestones</th>
<th>Description Measures</th>
<th>Timeline</th>
<th>Budget Means</th>
<th>Responsible /Involved</th>
<th>LC</th>
<th>Achievement</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Social and Management</strong></td>
<td>1. Awareness</td>
<td>Informing about Security and Connected Cycling Routes</td>
<td>✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓</td>
<td>University/ Users</td>
<td>City Council/Bike O.</td>
<td>M</td>
<td>L</td>
</tr>
<tr>
<td></td>
<td>2. Incentives &amp; Discounts</td>
<td>Incentives and rewards program for using the bike. Bike day, Library Bike Repository</td>
<td>✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓</td>
<td>University/ Users'</td>
<td>Companies</td>
<td>H</td>
<td>L</td>
</tr>
<tr>
<td></td>
<td>3. Enhancing security within cycling network</td>
<td>Health Campaigns and trainings, courses for avoid theft, maintenance, security and safety ride</td>
<td>✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓</td>
<td>University/ Community</td>
<td>Companies</td>
<td>H</td>
<td>M</td>
</tr>
<tr>
<td></td>
<td>4. Cycling attitudes</td>
<td>Analysis of the attitudes, uses, modal split and the predisposal of Cycling</td>
<td>✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓</td>
<td>University/ Users</td>
<td>Users</td>
<td>M</td>
<td>L</td>
</tr>
<tr>
<td><strong>Infrastructure Measures</strong></td>
<td>1. Improve security at intersections and Access</td>
<td>Creating Crosswalks, add signal information, improving light conditions and pavement</td>
<td>✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓</td>
<td>University/City Council</td>
<td>Companies</td>
<td>H</td>
<td>H</td>
</tr>
<tr>
<td></td>
<td>2. Improve Parking Security</td>
<td>Allowing Parking inside Buildings and access, increase surveillance, cameras, lighting system</td>
<td>✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓</td>
<td>University/ Users</td>
<td>Companies</td>
<td>H</td>
<td>M</td>
</tr>
<tr>
<td></td>
<td>3. Locker and Shower services</td>
<td>Increasing cycling areas inside the campus (access, security, well connected) Park &amp; Ride</td>
<td>✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓</td>
<td>University/City Council</td>
<td>Companies</td>
<td>H</td>
<td>M</td>
</tr>
<tr>
<td></td>
<td>4. Bike Space/Point</td>
<td>Developing an Integrated Bike service (renting, parking, maintenance, workshops, discounts)</td>
<td>✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓</td>
<td>University/City Council</td>
<td>Companies/ Users</td>
<td>H</td>
<td>M</td>
</tr>
<tr>
<td><strong>Vehicle Measures</strong></td>
<td>1. Medical Contact &amp; Reppair Kit</td>
<td>Creating a cyclists service (doctor, physiotherapist, trainers, campuses’ repair kit)</td>
<td>✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓</td>
<td>University/ Users/</td>
<td>Companies</td>
<td>M</td>
<td>L</td>
</tr>
<tr>
<td></td>
<td>2. Improving Intermodality Public Transport × Cycling</td>
<td>Allowing to take the bike in the Public Transport</td>
<td>✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓</td>
<td>University/City Council</td>
<td>Transport O.</td>
<td>M</td>
<td>L</td>
</tr>
<tr>
<td></td>
<td>3. Registers to avoid theft</td>
<td>ID Register to prevent theft</td>
<td>✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓</td>
<td>University/ Companies</td>
<td>Users</td>
<td>M</td>
<td>L</td>
</tr>
<tr>
<td></td>
<td>4. Renting University Fleet</td>
<td>Acquire fleet of renting bikes + Safety Kit (lockers, helmet, reflective jacket, ring, light)</td>
<td>✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓</td>
<td>University/ Users/</td>
<td>Companies</td>
<td>H</td>
<td>H</td>
</tr>
<tr>
<td><strong>ICT</strong></td>
<td>1. APP and Website</td>
<td>Developing Cycling APP (routing, incentives, competitions, health, green info, services)</td>
<td>✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓</td>
<td>University/Community</td>
<td>Companies</td>
<td>H</td>
<td>M</td>
</tr>
<tr>
<td></td>
<td>2. Register system</td>
<td>Dissemination campaigns &amp; developing a social cycling network</td>
<td>✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓</td>
<td>University/Community</td>
<td>S Media/Sponsors</td>
<td>H</td>
<td>L</td>
</tr>
<tr>
<td></td>
<td>3. Awareness and Green Information</td>
<td>Informing &amp; Fostering APP register for bike property</td>
<td>✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓</td>
<td>University/ Users</td>
<td>Companies</td>
<td>M</td>
<td>L</td>
</tr>
<tr>
<td></td>
<td>4. Incentives System</td>
<td>Sensing bikes to monitor and register about behaviours, CO2 emissions</td>
<td>✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓</td>
<td>University/ City Council</td>
<td>Users/Companies</td>
<td>M</td>
<td>L</td>
</tr>
</tbody>
</table>

**Date:** 9/12/2018  
**Start Date:** 1/2/2018  
**Final Date:** 31/12/2020  

**Expected Quantitative Objective:** <5%  
**Quantitative Objective Achieved:**
D3.5.2 ICT tools, models and requirements for communication between different actors and planning instruments

OBJECTIVES

1) Carry out an exhaustive review of the scientific literature, which addresses the relevant variables related to ICT and sustainable mobility in universities. Also taking into account the framework and guidelines from the European Commission.

2) Analyze related projects and European Framework, platforms, good practices in other universities, technical requirements (DATA Warehouse, DSS, ITS) to optimize data collection, planning, management and monitoring of mobility in the University.

3) Propose an integrated system for the implementation of Sustainable Mobility in the University. CAMP-sUmp e-Core System
CAMP-sUmp e-Core system: A Proposal of an integrated Model for Sustainable Mobility at Mediterranean Universities

It is structured in 7 levels:

1) USERS AND PROVIDERS
2) DATA ACQUISITION
3) INPUTS
4) INPUT DATA CENTER
5) AGGREGATED INFORMATION SYSTEM
6) e-Core TOOLS
7) OUTPUTS

Taking into account

• Universal Accessibility
• Equity
• EU standardization
• e-security and privacy
CAMP-sUmp e-Core system

Integrates all this information and gives the output of the necessary information for each user/institution

- Outputs and specifications (E-health, incentives, CO2 emissions saved..)
- Monitoring and assessment
- Awareness campaigns
- Enhancing decision makers commitment. DSS (this e-core acts like decision support system for mobility managers)
- Gamification
Project Conclusions
<table>
<thead>
<tr>
<th></th>
<th>Project Main Achievements</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>First EU-MED network for university mobility</td>
</tr>
<tr>
<td>2</td>
<td>Stakeholders involvement through a participatory approach</td>
</tr>
<tr>
<td>3</td>
<td>Data collection on Universities mobility systems</td>
</tr>
<tr>
<td>4</td>
<td>Awareness-building on University mobility issues</td>
</tr>
<tr>
<td>5</td>
<td>Building Action Plans, Roadmap and ICT Tools for University mobility</td>
</tr>
</tbody>
</table>
**Project Follow-up**

<table>
<thead>
<tr>
<th></th>
<th>Implementation of the Project outputs at Campus level</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Implementation of the Project ICT model</td>
</tr>
<tr>
<td>3</td>
<td>Integration with urban planning policies and strategies</td>
</tr>
<tr>
<td>4</td>
<td>Improving knowledge transferring processes at University level</td>
</tr>
<tr>
<td>5</td>
<td>Awareness-building on Sustainable Mobility through dissemination of project results</td>
</tr>
</tbody>
</table>
Sustainable mobility planning on university campuses in the Mediterranean region: Lessons learned from the CampSUMP project

Dr. Loukas Dimitriou
Head, Lab for Transport Engineering
University of Cyprus