

A TINY ACT OF GENEROSITY

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DONATE

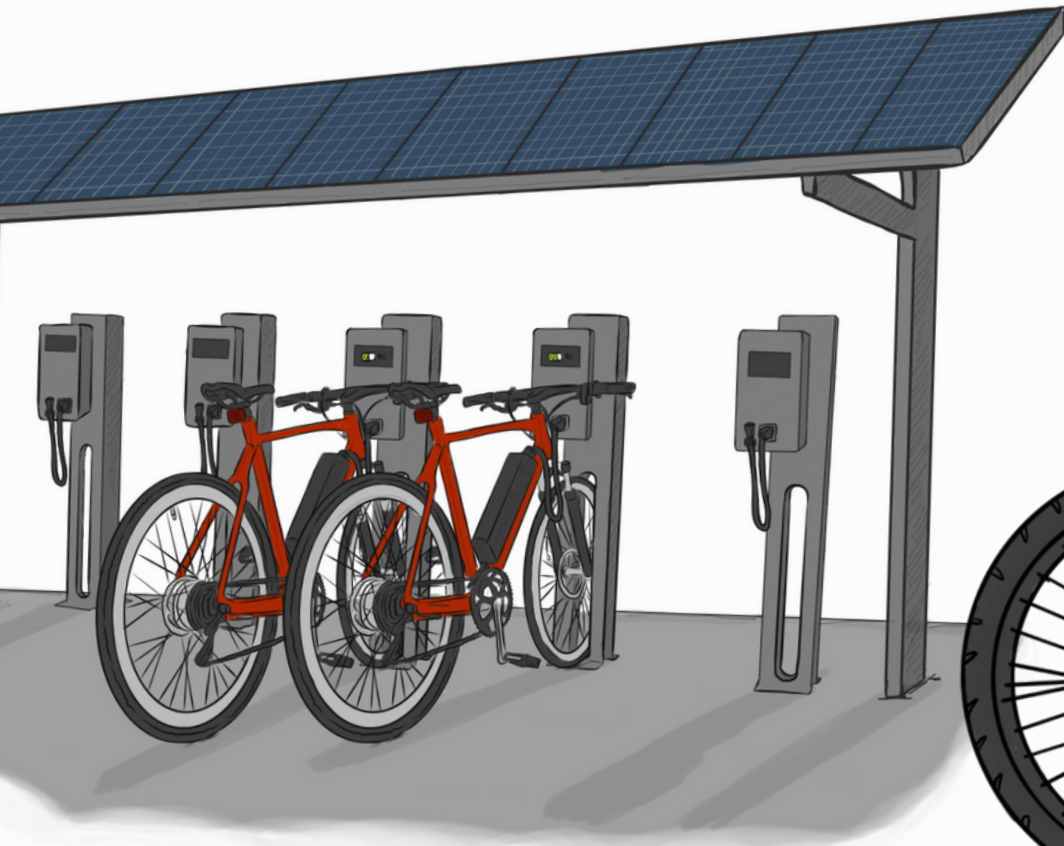
FOR CARBON NEUTRAL NITK (CNN)



VIDHYUG

E - BICYCLE

3.0 & 3.1



EXCLUSIVELY FOR NITK FRATERNITY

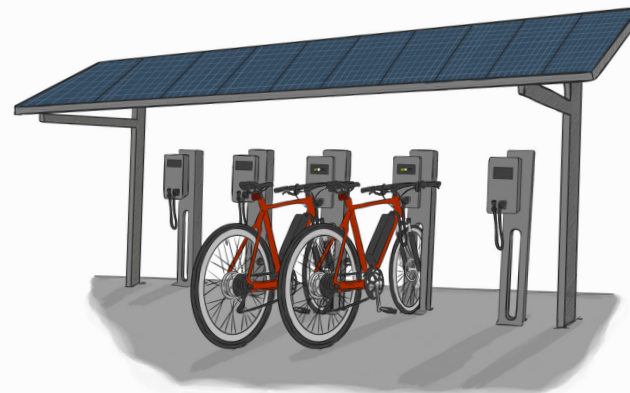
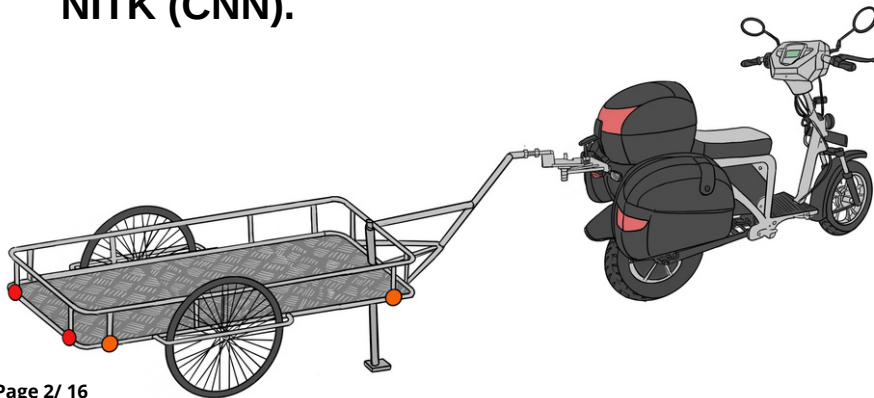
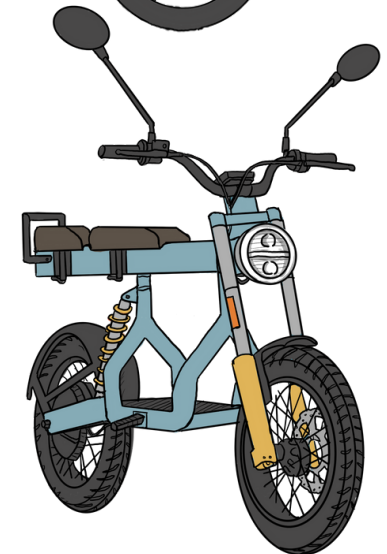
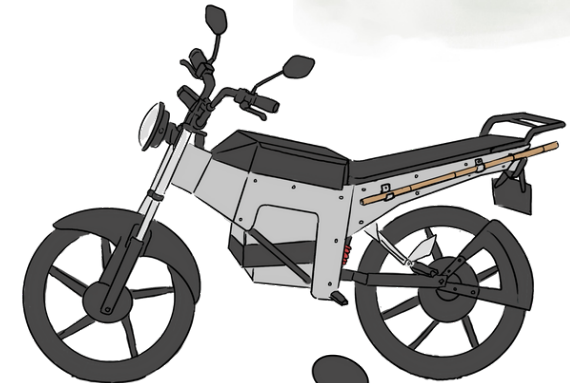
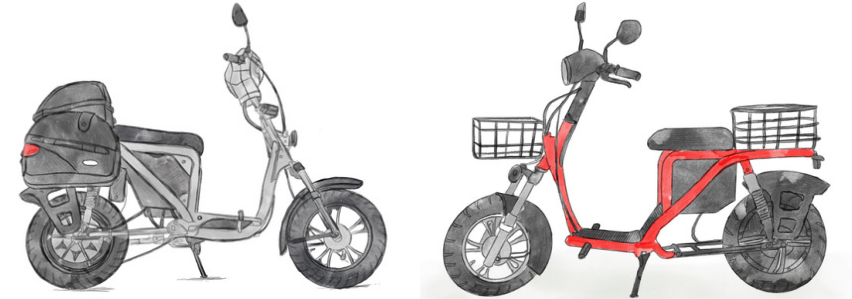
Designed & made in CSD NITK SURATHKAL

CARBON NEUTRAL NITK (CNN)

VidhYug : An E-mobility eco-system

As part of the institute's attempts to become a "Carbon Neutral NITK." (CNN), the E-mobility team at the Centre for System Design, NITK Surathkal, has been hard at work designing and developing the VidhYug E- Mobility Series. VidhYug series are E-Mobility aligned with government regulations for EVs that create E-scooters, E-cycles, E-bikes, E-vans, Solar Charging Stations and supportive accessories for E-mobility system within NITK. VidhYug series is specially built to fit diverse NITK fraternity campus mobility needs that allows students, faculty, alumni and employees to effectively commute throughout the campus.

The VidhYug series, a made-in NITK E-Vehicles, provides energy-efficient, emission-free, and low-cost mobility while supporting the institute's goal of being a Carbon Neutral NITK (CNN).



AN EARNEST PLEA TO NITK ALUMNI - 1972 BATCH

Thousands of candles can be lit from a single candle, and the life of the candle will not be shortened. Happiness never decreases by being shared. – Gautama Buddha

No one understands the significance of the above phrase better than NITK Alumni.

Alumni are the backbone of any educational institution's success, and it is in the alumni's generous hands to help the institute when the need arises. We at the Centre for System Design, NITK Surathkal, humbly request that all of you come forward and willingly support VidhYug E-Mobility Series Project, our effort toward Carbon Neutral NITK (CNN). Your contributions will go a long way in helping institute reach its Carbon Neutral NITK (CNN) goal. Professors from the NITK fraternity and Alumni Association members will serve on the VidhYug E-Mobility Series project assessment committee, which will also include the contributors. Donors will have a voice in how the initiative progresses. We pledge to preserve transparency in all of our dealings, and the project's outcome will be shared on social media and YouTube.



VIDHYUG 3.0

E - Cycle

SPONSORED BY 1981 BATCH

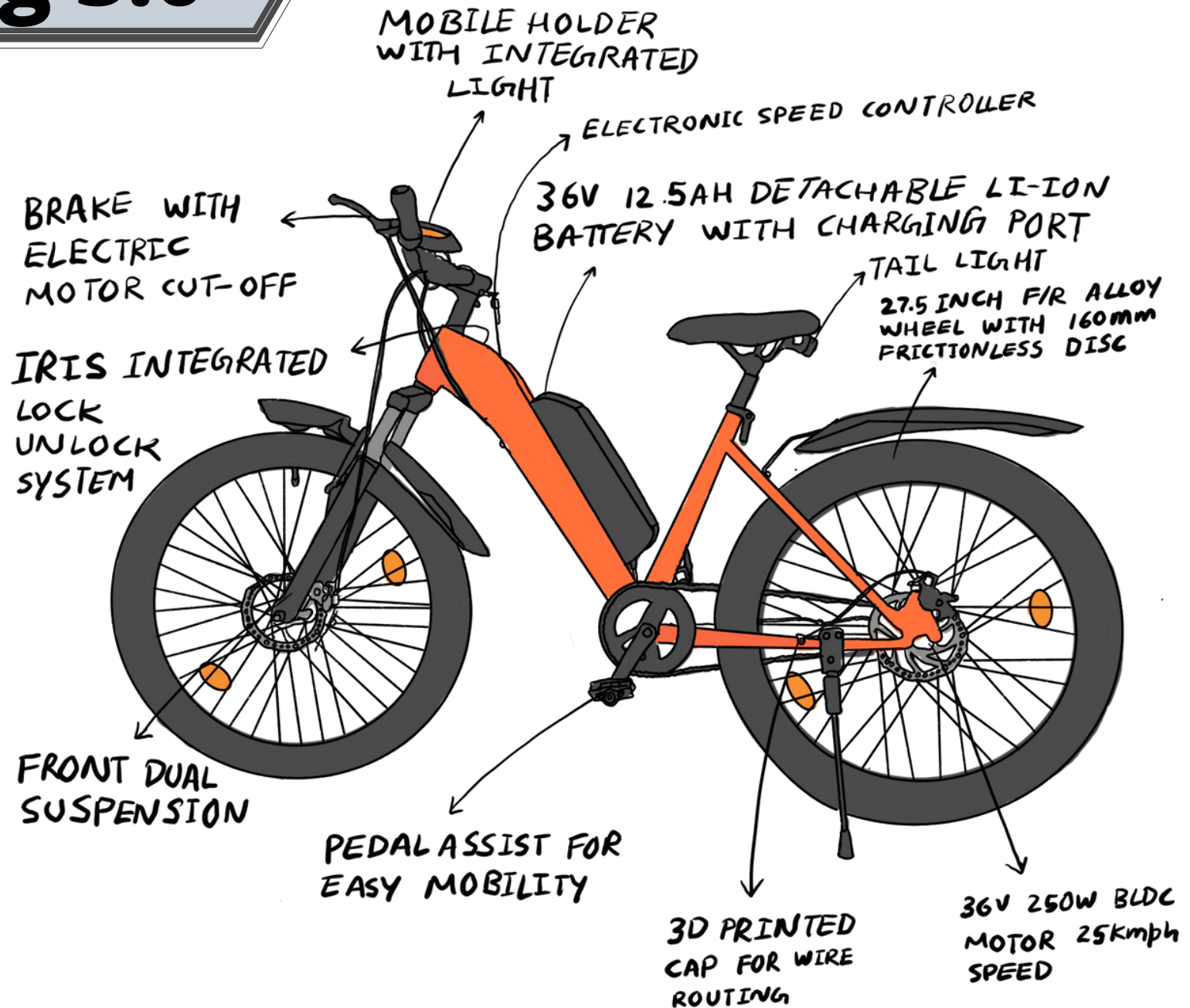
NITK Surathkal

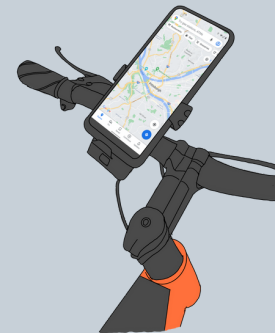
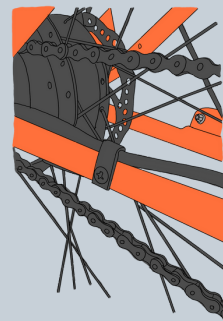
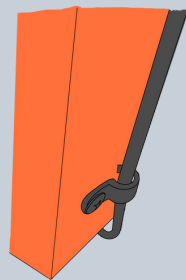
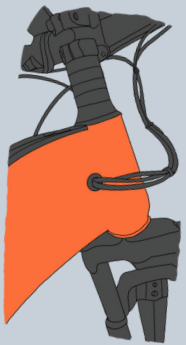


The team wanted to design an E-cycle catering for both men & women, while also maintaining a sleek & modern look. 3D modeling was done using institute-licensed design software tools. The mainframe manufactured using a laser cutting facility was tested to meet the design requirements. 3D printed parts were used for the mounting of electronic speed controllers and cable routing. All the mainframe parts were welded in place using the state of art welding equipment.

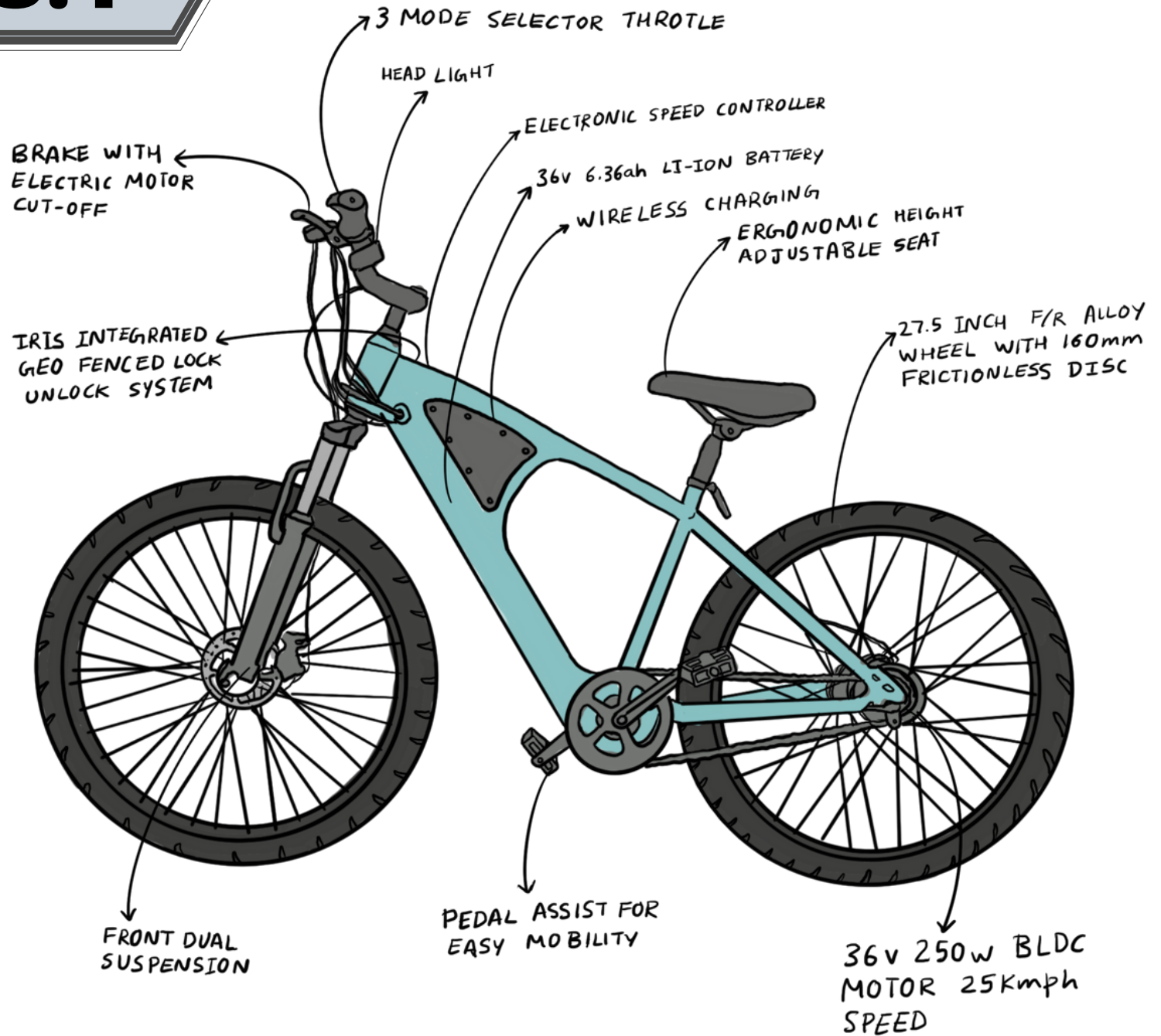
This E-cycle, VidhYug 3.0 was able to see the light of the day solely due to the generous contribution of 1981 batch alumni. Alumni have always been spear headers of the institution's pride. As a result of their funding 1 e-cycle is developed as a pilot study.

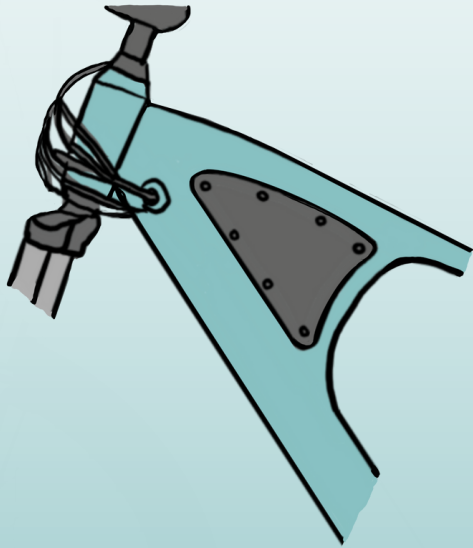
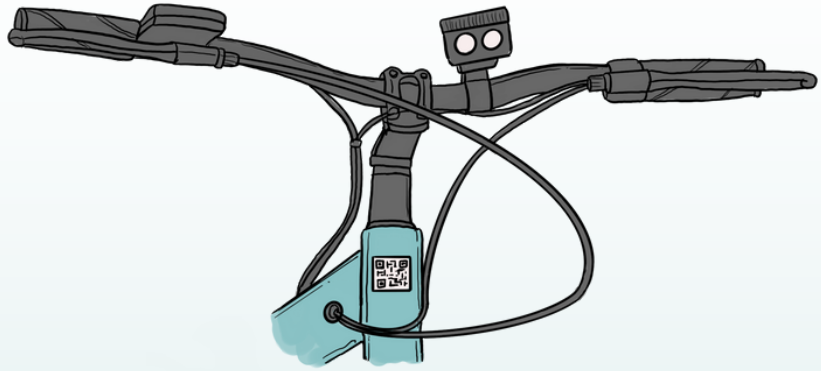
VidhYug 3.0





VidhYug 3.1





FACULTY INVOLVED



Dr. Pruthviraj Umesh
CSD'S E-Mobility Head
Assistant Professor, WR&OE Coordinator
NITK Surathkal



Prof. K.V. Gangadharan
CSD'S Coordinator
Professor, Mechanical Engineering
NITK Surathkal



Dr. Mohit P. Tahiliani
IoT Integrator
Assistant Professor, Computer Science and Engineering
NITK Surathkal



Prof. Udaykumar R. Yaragatti
Director
NITK Surathkal



Prof. Vijay H. Desai
Dean AAIR
NITK Surathkal



S K Guruprakash
1972 Batch



P M Pai
1972 Batch

STUDENTS CORE TEAM

Ms. Jnana, MTech (R)
Mr. Rakshith Kotian, MTech (R), JRF
Mr. Steevan Loyd, MTech (R), JRF
Mr. Rajath C Kotekar, MTech (R), JRF
Mr. Anarkala Ramakanth, PhD Research Scholar
Mrs. Anuradha S, SRF, PhD Research Scholar
Mr. Latheesh Shetty, JRF
Mr. Sandesh Bhaktha, SRF, PhD Research Scholar
Ms. Spandana K Bhat, BTech

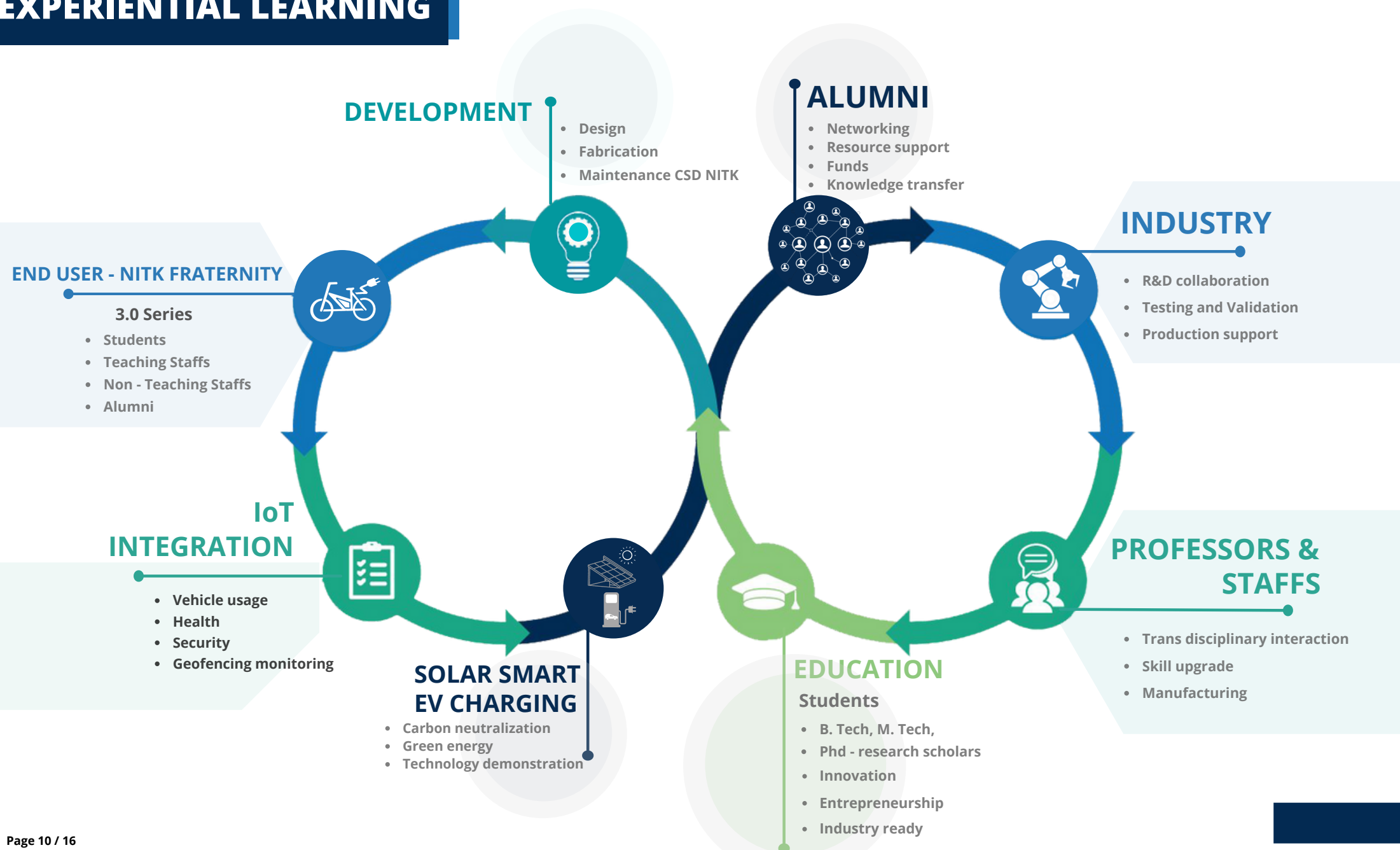
&

Mrs. Shradha Shetty V, SRF
Mr. Sachin S, JRF
Ms. Jeevitha, JRF
Mr. Sachin Shetty, Project Documenter
Mr. Sarvesh Naik, Project Documenter
Mr. Shibi Manohar, Illustrator
Mrs. Jyothi S, Project Manager
Mrs. Jayashree Arun Kumar, Technical Assistant
Mr. Hemanth Nitesh Kumar, Technical Assistant

100+ B-Tech & M-Tech Students involved in design and development of E - mobility

E - MOBILITY ECO SYSTEM

EXPERIENTIAL LEARNING



RESPONSE ANALYSIS



29% Female,
71% Male responders

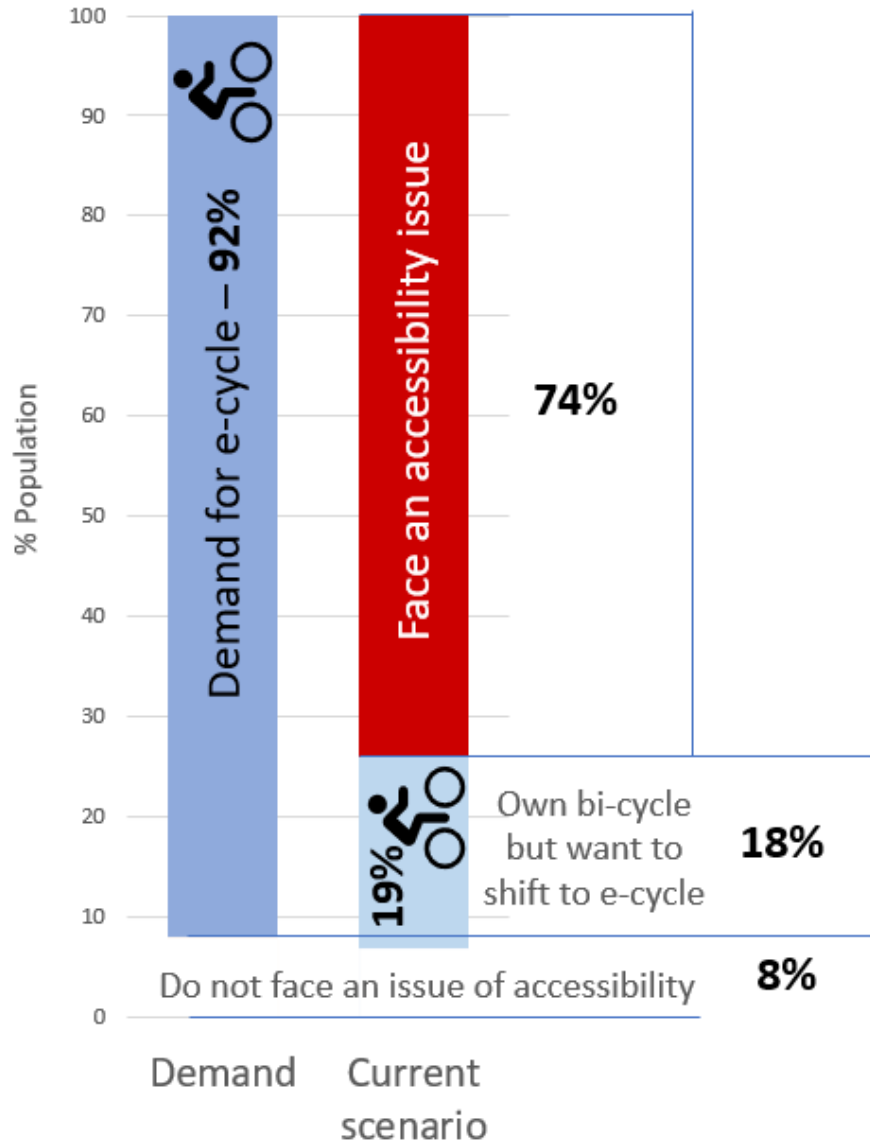


7% day scholars,
93% hostel / NITK residents



92% of the respondents are eager and willing to use an E-cycle inside NITK campus

DEMAND FOR E - CYCLES



An indispensable mode of commute

- Out of 92% demand, 98% need it for commute
- This explains the need for this mode to address the daily commute requirements of the people of NITK

High impact on lives of the people of NITK

- ~ 85 % of the people believe that e-cycle would create an extremely positive impact on the people of NITK
- More than 50% assigned 10/10 on the impact scale

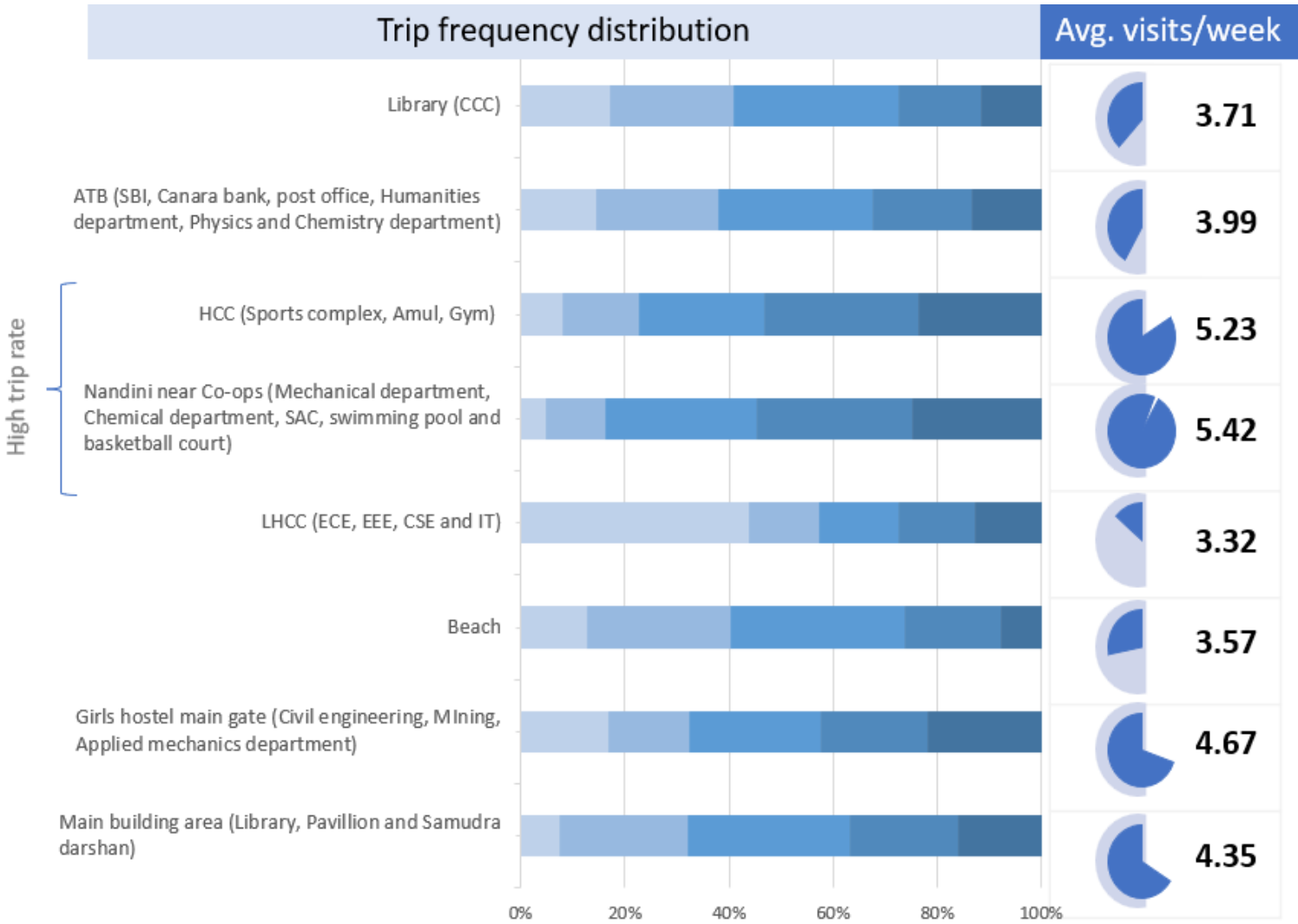
E-cycle more favourable for existing bicycle owners too

- Out of 19% who own Bi-cycle, 93 % want to shift towards e-cycle ~ 18% of the total

Up for availing E-cycle services at an hourly charge

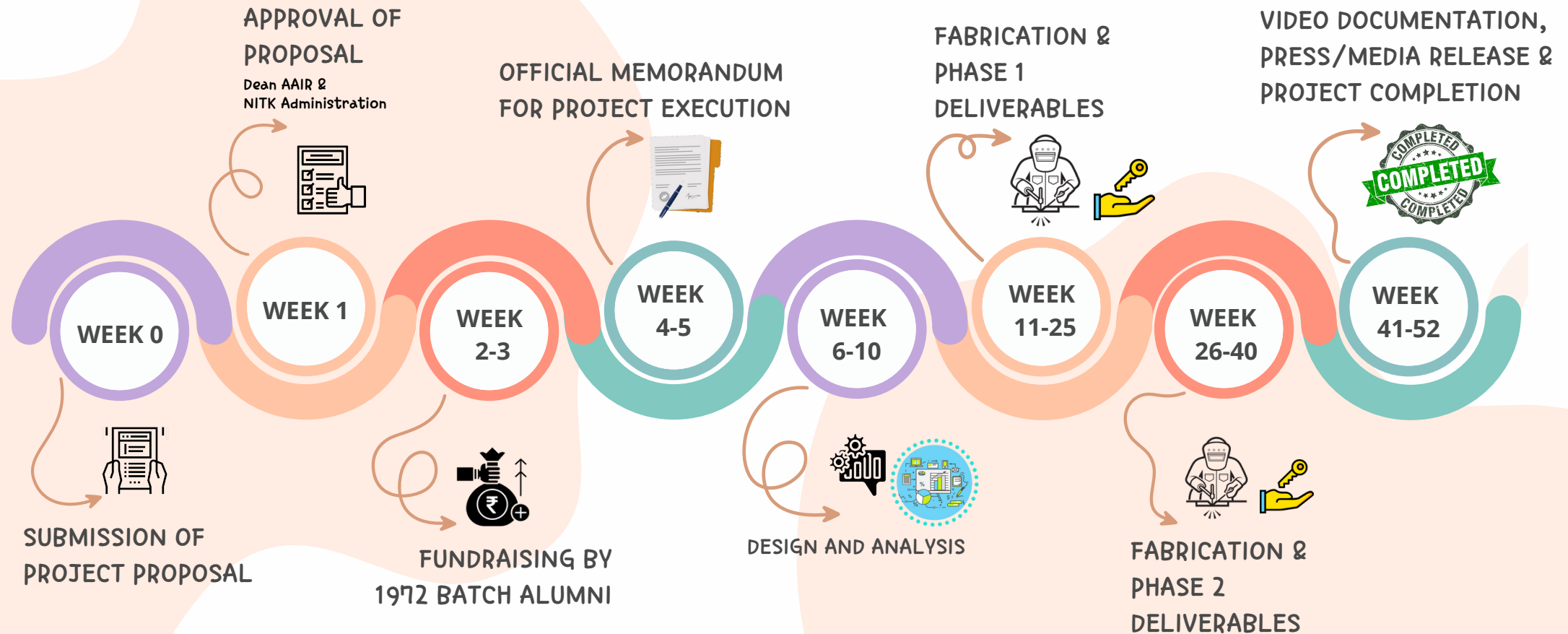
- More than 80% of the people are willing to use the E-cycle for a fare upto ₹2

TRIP GENERATION OF CLUSTERS



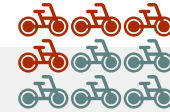
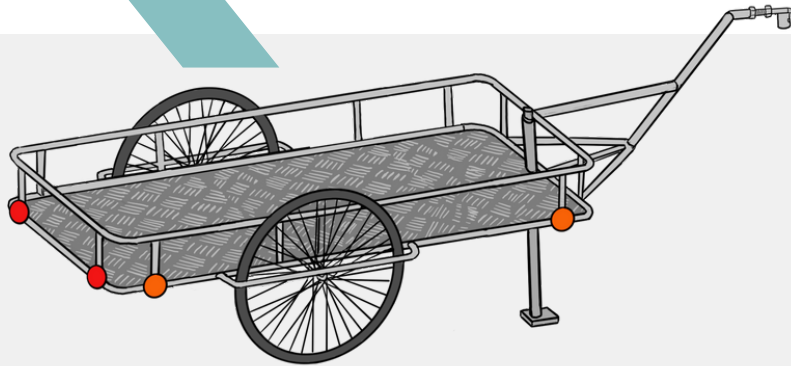
- ▶ Respondents preferred cycle parking to be accessible within 150 m
- ▶ Based on this Entire campus was divided into accessible clusters with major trip generation potential
- ▶ Nandini cluster and HCC have the highest trip generation thereby requires a proportionately higher parking facilities

TIMELINE & ROADMAP



BUDGETARY REQUIREMENTS

DESIGN, FABRICATION & MAINTENANCE OF E-CYCLES & SUPPORTIVE ACCESSORIES FOR E-MOBILITY SYSTEM



22*
nos

Total : ₹ 15,00,000/-

E - Mobility VidhYug series

E-CYCLES

SUPPORTIVE ACCESSORIES FOR E-MOBILITY SYSTEM

Donation Transfer Details

Name of the Account Holder

NITK/KREC Endowment Fund

Account Number

37481178720

Name of the Bank

State Bank of India

Branch Surathkal, Mangalore

Address

Surathkal Branch, NITK Campus,
P.O.Srinivasanagar, Dakshina Kannada,
575025

IFSC Code

SBIN0002273

SPIN-OFF EFFECT



Savings in ~ ₹91,80,000 of students spending

- 17% of the respondents have invested in cycles and are willing to shift towards e-cycles, they have on average spent ~ 9000 for a cycle.
- Extrapolating it to a total strength of 6000, the total amount sums up to ₹91,80,000



IMPETUS TOWARDS INNOVATIVE RESEARCH



of the respondents interested to work towards e-cycle



Stepping stone to develop scalable solutions for E-Mobility as a service eco-system

