

**A Systems Approach
to
Designing
Sustainable Cities
Infrastructure:
Placing the 17 UN SDGs
in Context**

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WHAT WE WILL COVER

- **UN 17 SUSTAINABLE DEVELOPMENT GOALS (SDGs)**
- **FOUNDATIONS OF HUMAN WELL-BEING**
- **SUSTAINABILITY**
- **SYSTEMS APPROACH USING SDGs**

17 UN SDGs

1. No Poverty	10. Reducing Inequality
2. Zero Hunger	11. Sustainable Cities and Communities
3. Good Health and Well-being	12. Responsible Consumption & Production
4. Quality Education	13. Climate Action
5. Gender Equality	14. Life Below Water
6. Clean Water and Sanitation	15. Life On Land
7. Affordable and Clean Energy	16. Peace, Justice, and Strong Institutions
8. Decent Work and Economic Growth	17. Partnerships for the Goals..
9. Industry, Innovation, & Infrastructure	



SUSTAINABLE DEVELOPMENT GOALS



**FOUNDATIONS
OF
HUMAN
WELL-BEING**

- freedom,
- self-determination,
- intimacy with another,
- social community,
- protection from the elements,
- food , water, health, entertainment,
- accumulation of things of value to promote human well being,
- knowledge and opportunity to prosper
- opportunity to use one's talents .

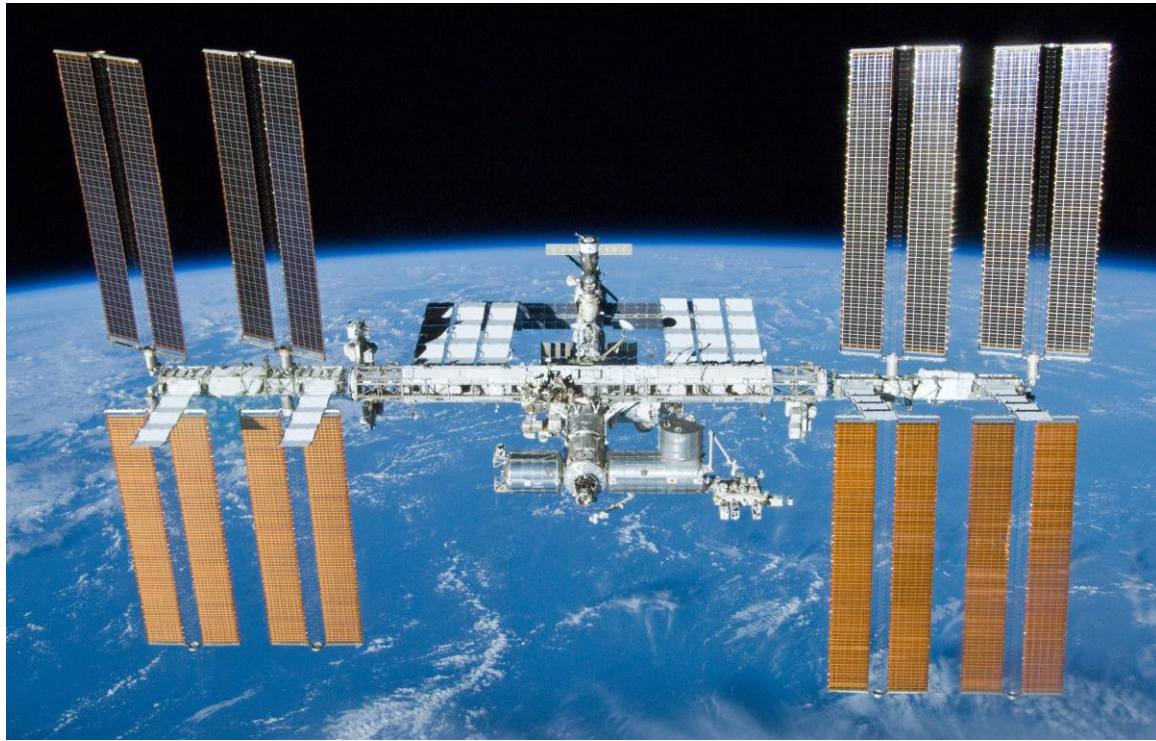
FOUNDATIONS OF HUMAN WELL-BEING

- foundations are linked to the culture of a community- a tribe or government.
- The list is reflected in archeological studies and various life-styles from those who live as nomads in the desert and tribes in the rainforests to those who live in villages, small towns and large cities.

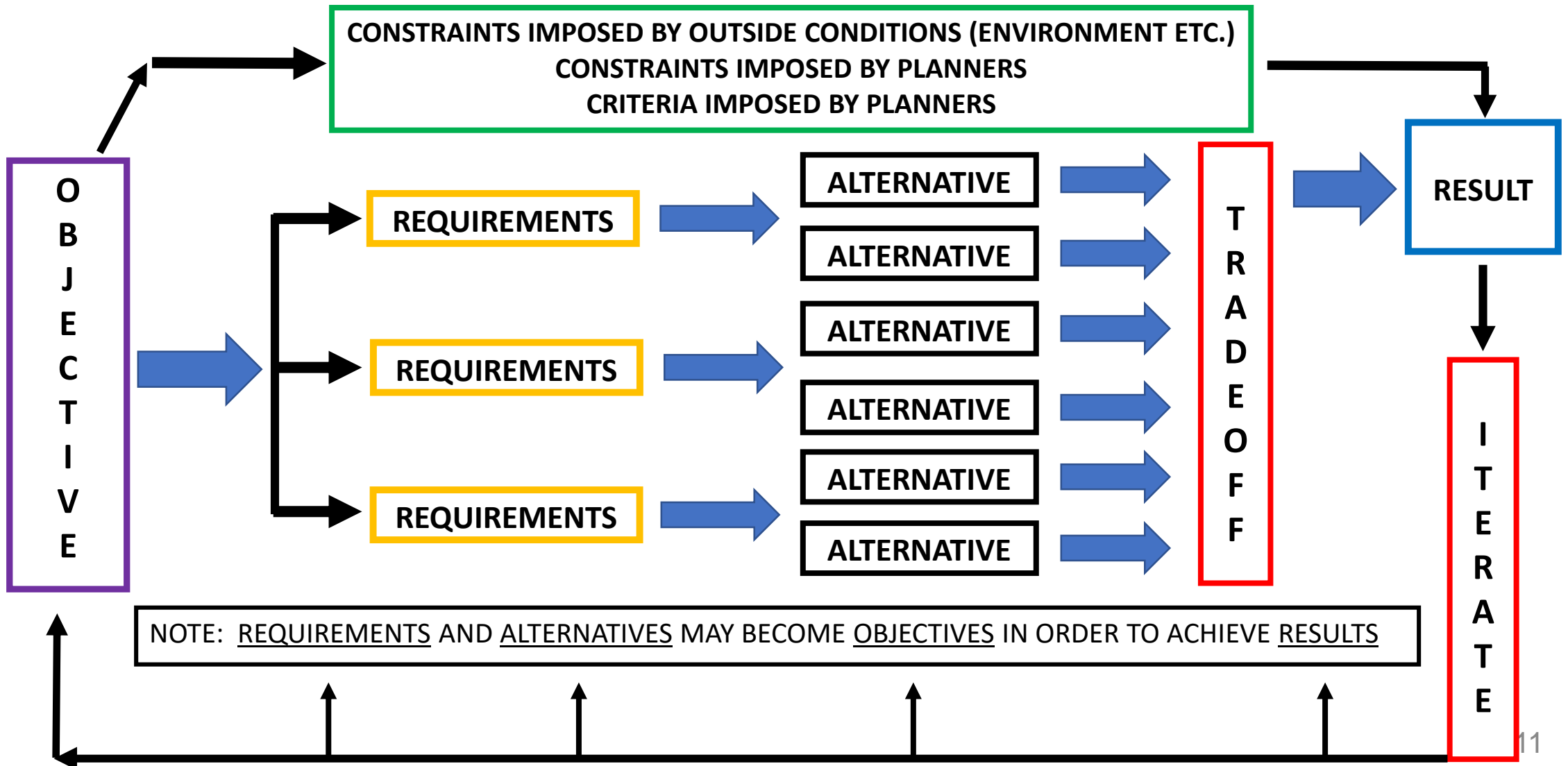
SUSTAINABILITY

- the capacity to endure or to continue over the long term
- For human society, “sustainability” implies
 - 1.the long-term maintenance of responsibility for, as well as stewardship of the world and
 - 2.the responsible management of its resources.
- The above naturally have have environmental, economic, and social dimensions.

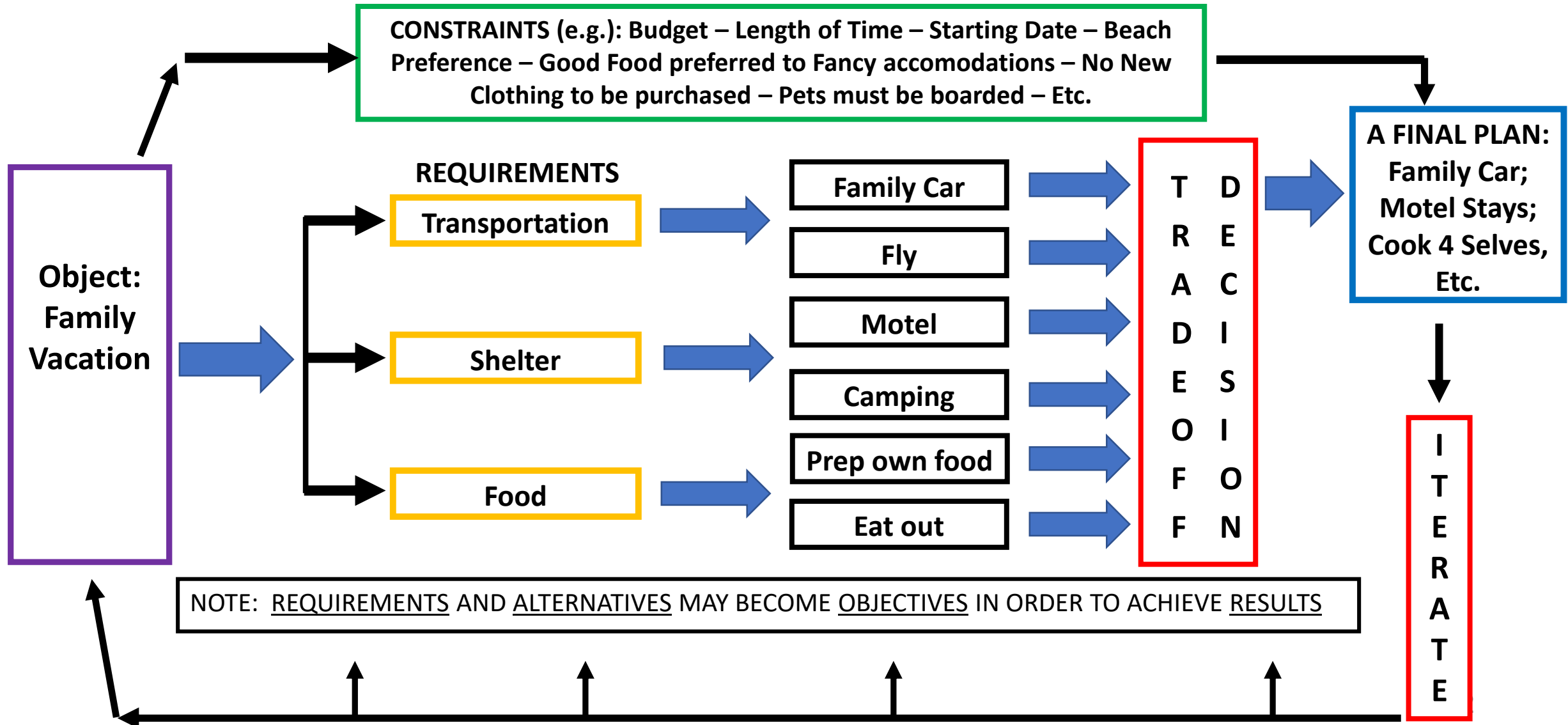
SYSTEMS APPROACH



Systems Approach



Example 1: Family Vacation



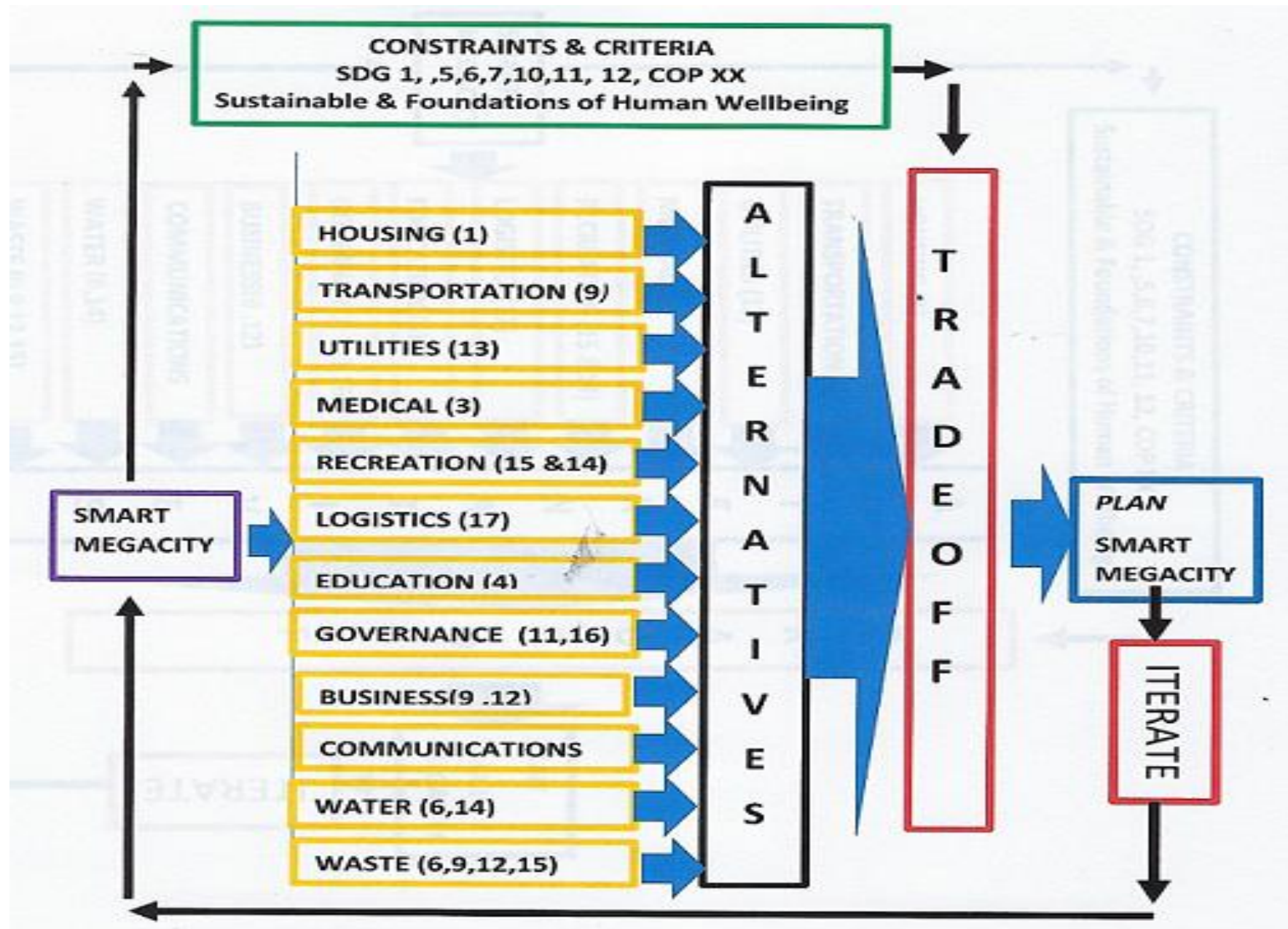
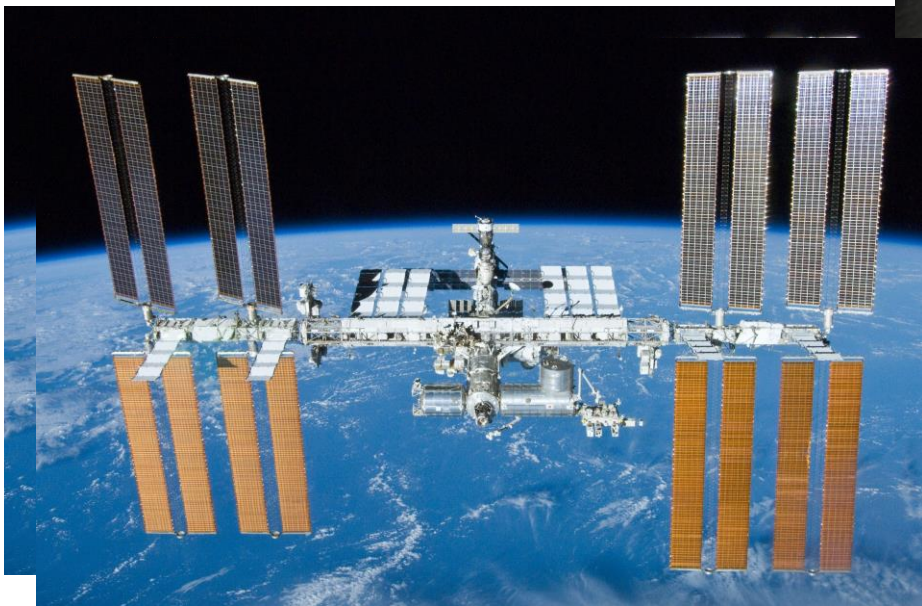


FIGURE 4. APPLYING THE PROPOSED SYSTEMS APPROACH USING UN SDGs TO DESIGN SMART MEGACITY

Systems Paradigm

Powerful Today – Potentially More So Tomorrow



International Space Station



Jupiter Orbiting Spacecraft



THE GEORGETOWN PROJECT
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Examples – Learnings – Implications