

Meeting Minutes



Architecture Engineering Planning Interiors

1650 Spruce Street, Suite 300
Riverside, CA 92507

Meeting Date	04.05.2022
To	Mehran Mohtasham
From	DLR Group
Location	via ZOOM
Project	RCCD: Sustainability and Climate Action Plan / IEMP / TCO
Project No.	N/A
Attendees	Mehran Mohtasham, Hussain Agah, Myra Nava, Prem Sundharam, Steve Marshall, Majd Askar, Dr. Collins, Robert Beebe, Ron Kirkpatrick
Purpose	Total Cost of Ownership (TCO) model and framework

Goal for the discussion

Review APPA recommendation for TCO Criticality Level and review user stories on TCO App.

General Overview

TCO model is intended to support planning for new construction, existing building deferred maintenance, infrastructure needs, and academic program and policy planning. The model is intended to be holistic and offer historical and projected costs on all aspects of on-time and ongoing expenditures related to any planning decision.

An online APP was developed by DLR Group to access the TCO model and interact with it using the TCO framework adapted from APPA.

1. Review on TCO model

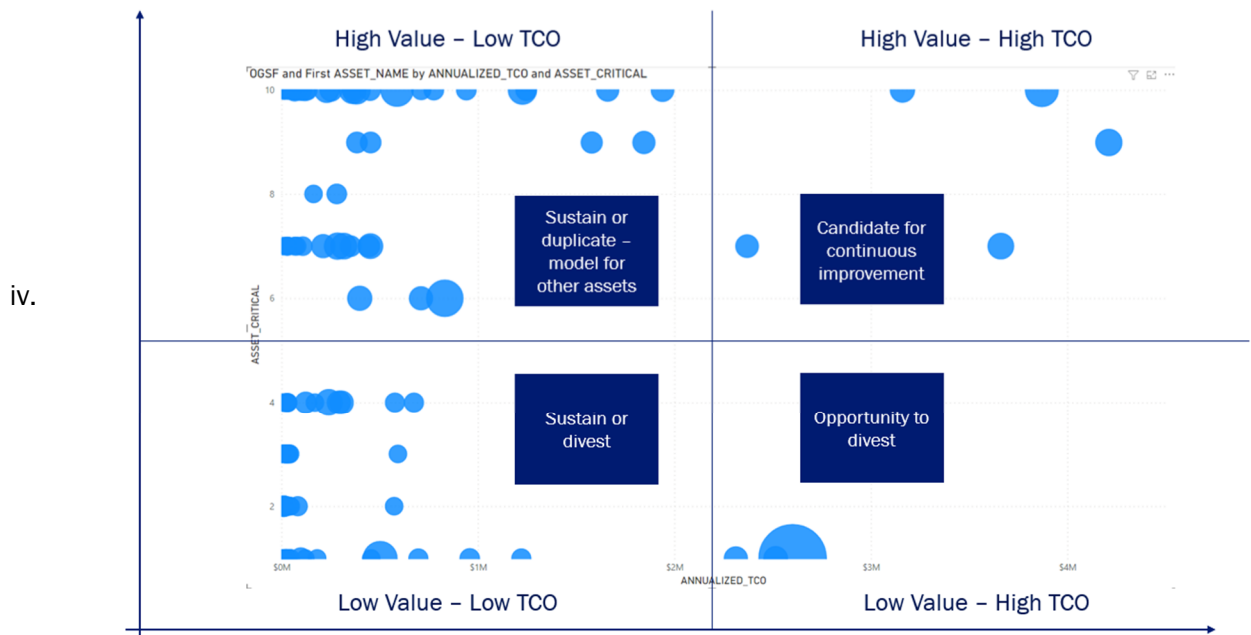
- a. We currently have three models that follow the APPA TCO guidelines as the framework. Further clarity to these models was discussed as below:
 - i. Existing Assets
 1. This model will focus on holistic operations and maintenance of all the existing assets.
 - ii. New Assets
 1. This model will focus on TCO considerations specifically for ONE new asset during the time of planning for the asset and will include APPA benchmarks for reference.
 - iii. Capital Planning
 1. This model will focus on near-term, mid-term and long-term planning needs for the district and each of the campuses by providing holistic TCO for current and future assets allowing the district to make informed planning decisions.

2. Review and feedback on the TCO framework

- a. DLR Group reviewed the methodology assumed for developing a criticality level for each asset to apply the APP TCO principle for decision making on whether further investment in an asset is worth it.
 - i. The methodology assumed the following criticality (value) for each asset
 - ii. Criticality – From 10 to 1, 10 being important to the mission of the organization and 1 being not that important to the organizational mission.
 1. Very High – 10 – Academic Teaching Spaces
 2. High – 8-9 – Research Labs and CTE
 3. Medium High – 7 – Assembly Spaces
 4. Medium – 5-6 – Media center / Library
 5. Medium Low – 4 – Administrative spaces
 6. Low – 2-3 – Storage sheds etc.

7. Very Low – 1 – Outdoor Facilities – sports etc.
- iii. Using this methodology, a chart was prepared illustrating assets to model financial planning, assets to improve, assets to potential sustain or divest per APPA guidelines.

Total Cost of Ownership – Asset Organizational Value (Criticality)



- v. Discussion
1. Based on the assumption, many assets fall within the model for other assets category, and there were a few that fell within the sustain or divest category.
 2. In general, this is a useful framework that can be more understandable when color coded by campus.
 3. Further exploring this concept, revealed certain shortcomings of this approach.
 1. The outdoor spaces will have a significant student experience that will be significant to the organization's mission and vision. So, assigning a low criticality value is not appropriate.
 2. Similarly, some of the outdoor sports spaces could also be teaching spaces.
 3. Inadvertently, this methodology of assigning a criticality (or value) to each asset might create unnecessary organizational challenges in terms of priority.
- vi. Decision
1. In lieu of using a subjective criticality number, let's look at using FCI (Facilities condition index) ranging from poor to good to apply the APPA TCO Decision Making guideline.
 2. DLR Group to revise this approach for the next meeting.

- b. DLR Group also reviewed the approach toward annualizing TCO components to better understand an annual budget, 5-year budget and 10-year budget for capital planning.

i. Based on previous discussions, the new equation for Existing Assets was determined as below

ii. $TCO = OM + UTL + REN + EUL$

1. OM = Maintenance + Custodial + Grounds + Repair
 1. Maintenance: \$1.66 per GSF – ANNUALIZED
 1. (APPA FPI Report – 5-year average)
 2. Custodial: \$1.48 per GSF – ANNUALIZED
 1. (APPA FPI Report – 5-year average)
 3. Grounds: \$5,584.68 per Acre – ANNUALIZED
 1. (APPA FPI Report – 5-year average)
 4. Repair Costs: From RCCD Fusion data per building.
 1. Annualized Operations and Maintenance (OM) Repair:
 2. If FCI is greater than 10%, then repair cost is annualized within a 5-year window, if not, a 10-year window.
 5. Renewal Costs: 4% of Current Replacement Value (CRV)

1. Annualized Renewal (REN) Cost:
2. If FCI is greater than 10%, then renewal cost is annualized within a 5-year window, if not, a 10-year window.
6. End of Useful Life Costs: \$6/sf
 1. Annualized End of Useful Life (EUL) Cost:
 2. If Asset Age is greater than 50, then EUL is as is at \$6/sf, if not, then EUL is divided by whatever life it has within the 50-year window

2. Discussion

1. There was general agreement in the approach toward annualization.
2. We need to continue to evaluate the usefulness of this budgeting methodology for repairs, renewals, and end of life costs, against the overall purpose of TCO as this develops further.

iii. Review of User Stories for each TCO model

1. As we develop the TCO App which will include all three TCO models, it is important to understand what each user group would use the TCO App for. So, a user story mapping discussion on understanding the goals and pain points were discussed for each asset. This will be further refined as the next meeting.



	User Group		Goal		Pain Point
As a	VP of Business	I want to	See a map of all the assets	In order to	Under the annualized TCO
As a	Facility Manager	I want to	Review and edit an Asset's TCO	In order to	Update O&M budget
As a	VP of Business	I want to	Current cost of operations and what's the future cost of operation (including labor)	In order to	Keep the asset operational
As a		I want to		In order to	
As a		I want to		In order to	
As a		I want to		In order to	
As a		I want to		In order to	
As a		I want to		In order to	
As a		I want to		In order to	

Total Cost of Ownership (TCO) aligns an organization's mission with its investment strategy for an asset's life-cycle including all related infrastructure and business process costs.

TCO provides a comprehensive approach to balancing both financial management and facilities management of an organization. TCO is a transparent, holistic, and efficient approach to asset management and resource allocation.



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	User Group		Goal		Pain Point
As a	VP of Business	I want to	Add a new asset based on program needs and see benchmark for TCO components	In order to	Evaluate TCO of a new asset
As a	VP of Business	I want to	Assign TCO values for new asset based on benchmark	In order to	Get board approval?
As a	VP of Business	I want to	Estimated cost of operating the asset and budgetary impact on physical, technology and HR side (not programmatic but on facilities)	In order to	Assess current workload (cautious about APPA standards as a guideline)
As a	VP of Business	I want to	Creating a budget for a new <u>bdg</u>	In order to	Create new positions for OM
As a	Facilities	I want to	Assess understanding whether it is worth putting money into this (overall and component) – based on life of the bldg. and additional investments needed	In order to	Invest or divest
As a	District	I want to	Show the APPA guideline recommended TCO – including personnel	In order to	Plan for resources



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	User Group		Goal		Pain Point
As a	Director of Capital Planning	I want to	Assess the assets by their criticality level (value) and TCO	In order to	Make planning decisions for further investments
As a		I want to		In order to	
As a		I want to	<u>Similar to new assets</u>	In order to	
As a		I want to		In order to	
As a		I want to		In order to	
As a		I want to		In order to	
As a		I want to		In order to	
As a		I want to		In order to	
As a		I want to		In order to	

3. Next Steps

- a. Continue the discussion on User Stories to be very concise and clear on the goals and purpose for the TCO App – by reviewing wireframes – sketches of the APP.
- b. Review the revised Decision-Making approach using the FCI and Annualized TCO calculations.
- c. Review deliverables with the District.
- d. Review TCO App governance and technology upkeep past the deliverable.