RCIS REFINEMENT AND STRATEGY EFFECTIVENESS

DRAFT REPORT

TASK 6

NORTH JERSEY TRANSPORTATION PLANNING AUTHORITY

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PRODUCTION TEAM

WSP

Project Manager	Scott Trommer
	Bernard Lee
Project Lead	Bryan Kiel
	Jackie Antonio
Project Support	Robin Christians

SUBCONSULTANTS

Project Support	Tina Lund, Urbanomics

TABLES

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1 INTRODUCTION

First developed in 2005 for the NJTPA 2030 Regional Transportation Plan (RTP), the Regional Capital Investment Strategy (RCIS) has served as the NJTPA's guideline to meeting the region's competing demands and opportunities through a balanced, realistic approach to regional transportation spending.[1] Since the formulation of the 2017 RTP, known as Plan 2045, the RCIS puts forth nine investment principles and associated guidelines that support the continued development of a regional economy with strong community centers, improved public health through active transportation, increased traveler satisfaction, and higher levels of environmental and economic sustainability.

In order to pair transportation spending with these investment principles, the RCIS created target allocations for twelve categories of capital investment from general purpose transportation funding sources. These allocations, or percentage of spending by category, were updated for Plan 2045 and reflect both the investment principles described in Table 1, while also mirroring past spending patterns to reinforce the NJTPA investment decisions.

Table 1: NJTPA RCIS Investment Principles

Help Northern New Jersey Grow Wisely	Expand Public Transit	Manage Incidents and Apply Transportation Technology
Make Travel Safer	Improve Roads but Add Few	Support Walking and Bicycling
Fix it First	Move Freight More Efficiently	Increase Regional Resiliency

Table 2: RCIS Investment Categories and Allocations

INVESTMENT CATEGORY	ALLOCATION (TARGET PERCENTAGE)	INVESTMENT CATEGORY	ALLOCATION (TARGET PERCENTAGE)
Road Maintenance and Preservation	17%	Roadway Enhancements	3%
Bridge Maintenance and Preservation	20%	Roadway Expansion	1%
Public Transit Maintenance and Preservation	36%	Dedicated Freight Facilities	3%
Public transit enhancement	4%	Intelligent Transportation Systems (ITS)	4%
Public transit expansion	4%	Bike and pedestrian facilities	2%
Direct Safety Improvements	4%	Travel Demand Management	2%

[1] NJTPA. Plan 2050 Appendix C: The Regional Capital Investment Strategy for the NJTPA Region. 2020. https://www.njtpa.org/NJTPA/media/Documents/Planning/Plans-Guidance/Planning%20for%202050/draft%20final/C-RCIS-Policy-Document.pdf

The twelve categories, shown in Table 2 with their set allocation targets, reflect the importance of preserving the existing transportation systems (roads, bridges, and public transit facilities) achieving a sustainable state of good repair, while also enhancing and expanding parts of the system that might help improve the regional economy. Still other categories reflect more targeted areas of investment to achieve regional goals such as direct safety improvements, technology improvements and other optimization approaches to improve mobility for travelers and freight, and investment in bike and pedestrian facilities to serve existing active transportation populations and expand its feasibility.

The RCIS's guidance role in pairing regional goals with investment categories also demonstrates its role in measuring system performance. Since the category allocations connect to the investment principles mentioned above, the RCIS additionally provides guidance on how to measure the effectiveness of the suite of transportation spending in meeting regional goals. This guidance supplements federal standards on measures of effectiveness (MOEs) and helps create a system performance report that is tailored to the needs and vision of North Jersey, as described in Chapter 4 of Plan 2050.[2]

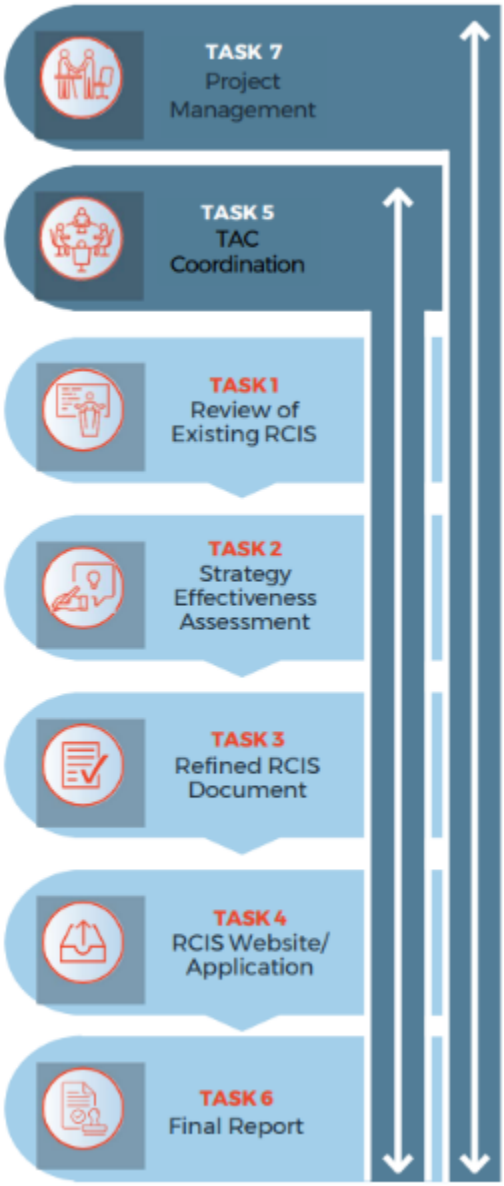
The RCIS has undergone some changes since its development in 2005 to reflect changing needs of the region and challenges and opportunities that have risen in importance. In this regard, the RCIS has an important connection with other regional planning efforts like Together North Jersey, subregional plans and strategies that reflect more local goals for development, and other regional and state-wide goals that may relate to areas outside of transportation, like multi-hazard resilience. The RCIS ultimately considers these together in its guidance for investment allocation.

Starting in 2023, NJTPA has pursued refinement of the RCIS to help cover all capital expenditures under NJTPA purview, align principles to the long-range goals, issues, and potential opportunities of the transportation network in the region, and incorporate performance outcomes in the evaluation of categories to make the principles actionable. Specifically, the refinement was split into seven tasks to help see through the refinement process, shown in Figure 1.

The purpose of this report is to summarize the outcomes of these tasks and summarize how this work was incorporated into the final proposed RCIS. This report provides selected insights from specific analysis that are further covered in Task technical memos, with an intention to demonstrate how they influenced specific refinement. The policy document, the key output of the refinement process, is included as Appendix A. The report (Task 6) summarizes the work for all deliverables associated with this project (namely Tasks 1-4) including a review of the original policy document, strategy effectiveness assessment, the refinement process and development of a final policy document, the accompanying website developed to communicate the RCIS to a wider audience, and a conclusion that highlights the living nature of the RCIS.

[2] NJTPA. Plan 2050 Chapter 4: Transportation System Performance. 2020. https://www.njtpa.org/NJTPA/media/Documents/Planning/Plans-Guidance/Planning%20for%202050/final%20pdfs/njtpa_plan2050_final2.pdf

Figure 1: Refinement Process



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2 ORIGINAL RCIS REVIEW

2.1 ORIGINAL RCIS ELEMENTS

The original RCIS, included as an Appendix to the Long Range Transportation Plan (LRTP), has four key elements. There are 12 investment categories that cover a broad range of projects and programs that are part of the Transportation Improvement Program (TIP). These categories broadly separate different types of infrastructure (such as roads versus rail), the general outcomes such as improvement or system preservation, more specific outcomes like direct safety projects, and finally specific user groups like freight or active transportation users. Though not specified in the RCIS, most TIP projects and programs are assigned to a specific category based on its description. As explained further below, some projects and programs have been categorized outside the RCIS.

The RCIS also includes nine investment principles which are action-oriented statements about what investments should try and achieve. These principles help assign the purpose and need of investments. Each principle is tied directly to one or more investment categories where that principle might best be applied. As part of the principles, the third element of the RCIS includes guidelines that give further support to what outcomes investments should try to achieve, what types of projects may be included within the associated principle, and guidance on how specific investments should be scrutinized to maximize desired benefits and avoid potential negative outcomes. Finally, the RCIS includes target allocation shares for each investment category. These targets, expressed in percentage terms, represent the desired level of investment over the long term to maximize the desired benefits.

2.2 QUANTITATIVE EVALUATION OF RCIS

To understand how RCIS targets have compared to past spending, a quantitative analysis was conducted that reviewed year over year expenditures between 2009 and 2022. The analysis showed that given fluctuations in spending levels, single-year comparisons of TIP spending and RCIS targets are not a useful comparison. Funding levels were highest in 2009 at over $4.5 billion in authorized expenditures, and ranged between $1.7 billion and $2.9 billion between 2010 and 2023. During this time, original, revised, and authorized budgets could vary by as much as a billion dollars, with revised budgets typically higher than original or authorized budgets.

As shown in Figure 2, the RCIS has typically not covered full expenditures in the TIP. Since 2009, the RCIS has typically covered about 85% of authorized expenditures. The funding not covered consisted of uncategorized funding for overhead project reserve, and select programs that had no prescribed targets. Of the funding that was covered by the RCIS, year-to-year spending for a specific category would typically vary significantly.

Figure 2: Original, Revised, and Authorized RCIS Expenditures as Percentages of TIP

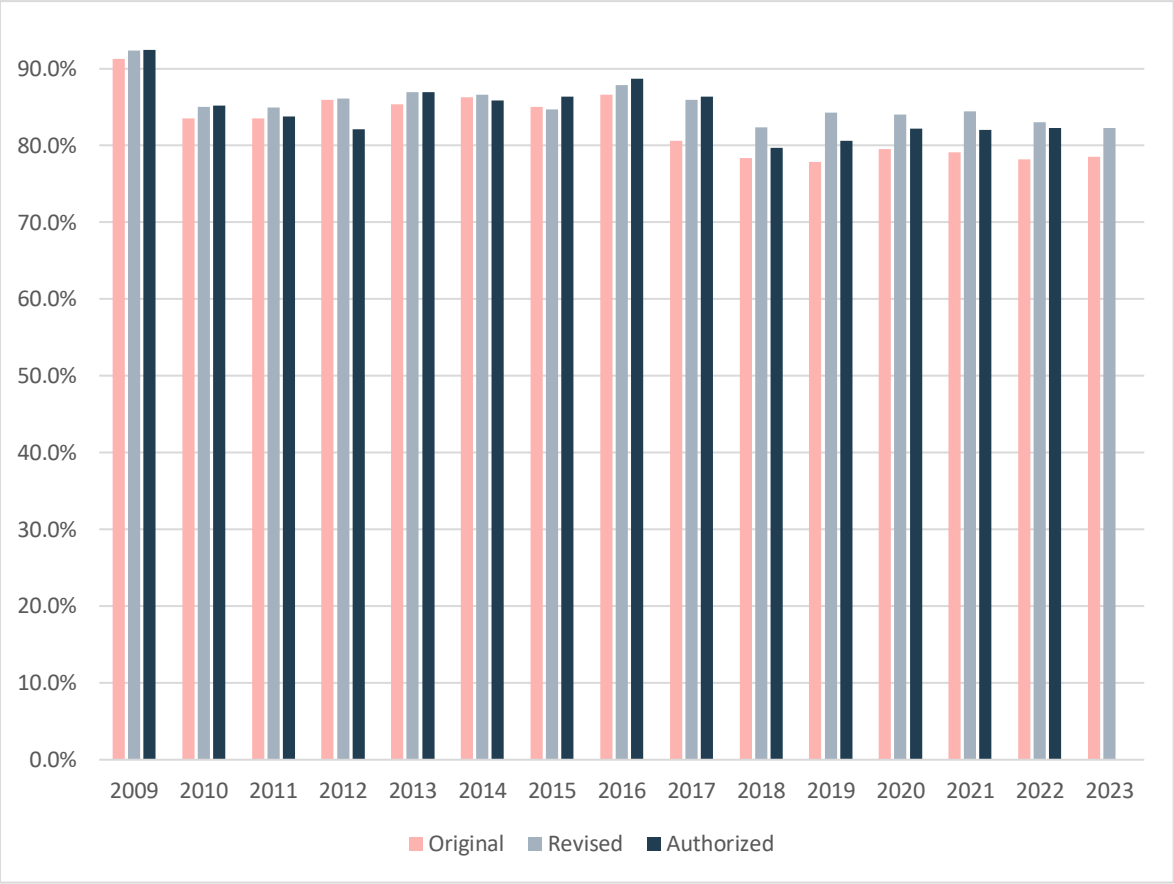
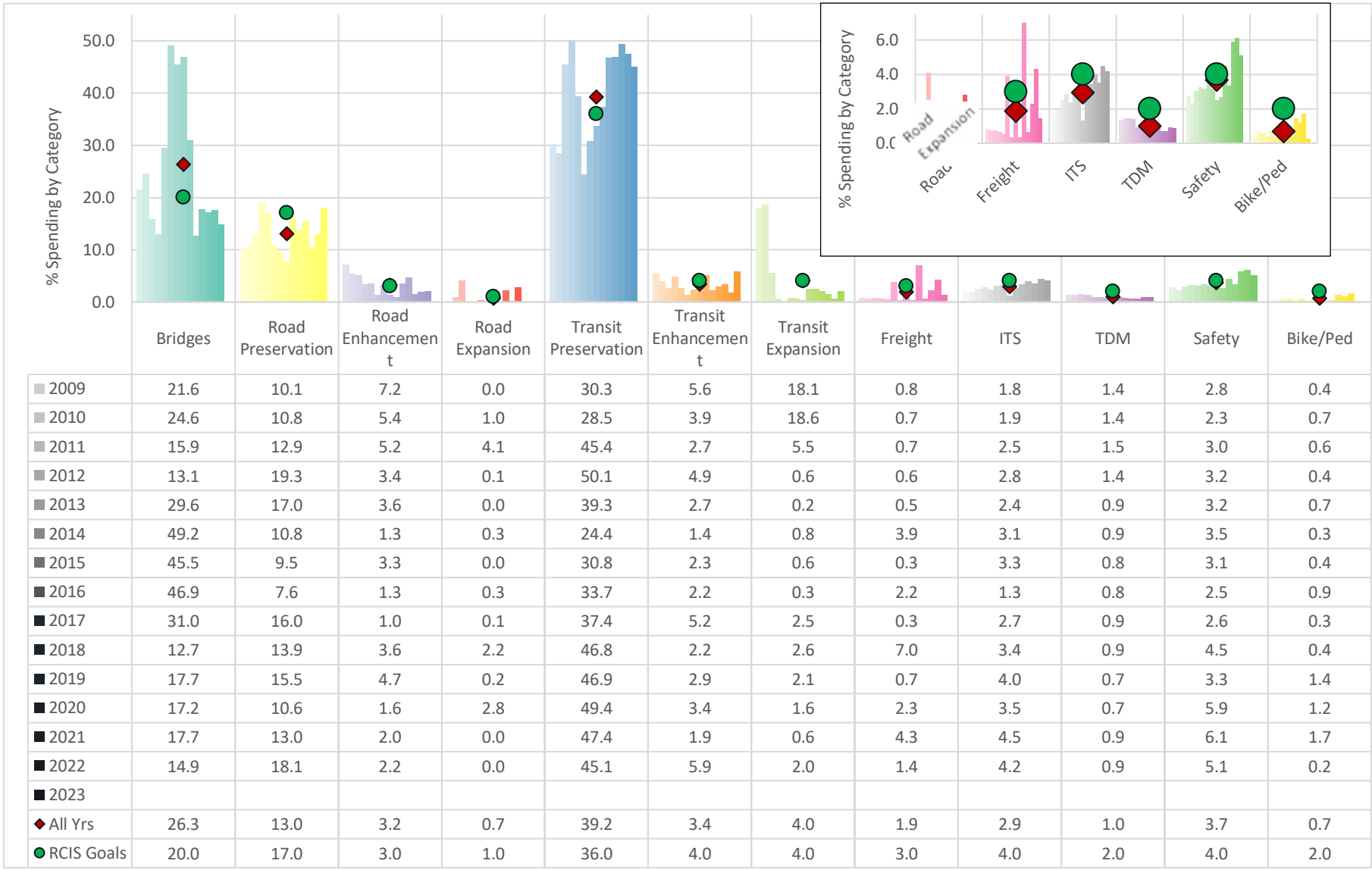


Figure 3 shows the share of authorized expenditures by RCIS category, with the yearly allocation shares and the average allocation shares between 2009 and 2022. Preservation and bridge projects consistently represented the highest share of funding, with averages for bridge and transit surpassing the RCIS targets of 20% and 36%, respectively. Other categories like road enhancement, transit expansion, and safety averaged near their target allocation. Some of the largest differences between average allocation and the targeted allocation were for the smallest categories. Bike/ped spending was 0.7% of total spending, less than half of its 2% target, while transportation demand management was half its 2% target.

Figure 3: Authorized Expenditures by RCIS Category 2009-2022



	Bridges	Road Preservation	Road Enhancement	Road Expansion	Transit Preservation	Transit Enhancement	Transit Expansion	Freight	ITS	TDM	Safety	Bike/Ped
2009	21.6	10.1	7.2	0.0	30.3	5.6	18.1	0.8	1.8	1.4	2.8	0.4
2010	24.6	10.8	5.4	1.0	28.5	3.9	18.6	0.7	1.9	1.4	2.3	0.7
2011	15.9	12.9	5.2	4.1	45.4	2.7	5.5	0.7	2.5	1.5	3.0	0.6
2012	13.1	19.3	3.4	0.1	50.1	4.9	0.6	0.6	2.8	1.4	3.2	0.4
2013	29.6	17.0	3.6	0.0	39.3	2.7	0.2	0.5	2.4	0.9	3.2	0.7
2014	49.2	10.8	1.3	0.3	24.4	1.4	0.8	3.9	3.1	0.9	3.5	0.3
2015	45.5	9.5	3.3	0.0	30.8	2.3	0.6	0.3	3.3	0.8	3.1	0.4
2016	46.9	7.6	1.3	0.3	33.7	2.2	0.3	2.2	1.3	0.8	2.5	0.9
2017	31.0	16.0	1.0	0.1	37.4	5.2	2.5	0.3	2.7	0.9	2.6	0.3
2018	12.7	13.9	3.6	2.2	46.8	2.2	2.6	7.0	3.4	0.9	4.5	0.4
2019	17.7	15.5	4.7	0.2	46.9	2.9	2.1	0.7	4.0	0.7	3.3	1.4
2020	17.2	10.6	1.6	2.8	49.4	3.4	1.6	2.3	3.5	0.7	5.9	1.2
2021	17.7	13.0	2.0	0.0	47.4	1.9	0.6	4.3	4.5	0.9	6.1	1.7
2022	14.9	18.1	2.2	0.0	45.1	5.9	2.0	1.4	4.2	0.9	5.1	0.2
2023												
All Yrs	26.3	13.0	3.2	0.7	39.2	3.4	4.0	1.9	2.9	1.0	3.7	0.7
RCIS Goals	20.0	17.0	3.0	1.0	36.0	4.0	4.0	3.0	4.0	2.0	4.0	2.0

2.3 QUALITITATIVE EVALUATION OF THE RCIS

The quantitative analysis provided a benchmark for where spending has met, missed, or exceeded targets, but did not provide further context about the purpose and benefits of these investments. To understand how the RCIS relates to other planning processes, each investment principle was explored and aligned with other regional and statewide planning efforts. Investment principles have been developed to succinctly describe the RCIS policy guidance, and to help associate project categories with different types of regional goals. Importantly, for this latter purpose, it should be recognized that several principles cut across the twelve investment categories. For example, the first principle, regarding smart growth, is overarching and has implications for virtually all types of transportation investments. Nonetheless, for each investment principle, its purpose and explicit association with specific RCIS categories is indicated, and corresponding guidelines are compared or contrasted with aspects of other regional and statewide planning documents.

Beyond associated investment categories and target allocations, each principle was reviewed for its connections to other planning processes within the region and state. For instance, the *Fix It First* principle, which is largely comprises preservation and state of good repair projects, has key connections to NJDOT's Statewide Capital Investment Strategy as well as NJ TRANSIT's 10-year strategic vision. These agency plans highlight their asset management and performance plans for existing infrastructure. The *Move Freight More Efficiently* principle also echoes goals and vision set forth in NJDOT's 2023 Statewide Freight plan and the Port Authority of New York and New Jersey's Port Master Plan. As such, investment principles are inclusive of the stated objectives of NJTPA's member agencies and help connect investments to these objectives as well as NJTPA's own long-range planning goals.

The qualitative analysis also helped provide context for the types of projects and programs that can help actualize these principles and improve mobility in the region. For instance, the *Expand Public Transit* principle provides guidelines for investment in things like new bus routes, intermodal connectivity, additional cross-Hudson rail capacity, and other projects that will improve the speed and reliability of trips and expand transit capacity. These guidelines, while stopping short of discussing specific measures of effectiveness, help connect actual projects to potential performance outcomes, and highlighted a potential area for refinement.

Finally, the qualitative analysis provided notes on areas for refinement that would ultimately be considered as part of the updated RCIS. As mentioned before, one overarching area of refinement was to provide clarity on how investment categories might meet multiple principles, which was largely addressed through the incorporation of performance outcomes, as discussed in Section 4. The principles also did not capture total spending. For instance, *Increase Regional Resiliency* was a new principle added for Plan 2045, but had no ties to specific investment categories. Though the principle could be seen in climate adaptation projects spent on the system, as well as overhead and planning funding that wasn't covered by the plan, there was a need to help incorporate all areas of funding into investment categories. Further, the amount of spending on projects and programs not covered by the RCIS categories was substantial (around fifteen percent), and not having them in the RCIS meant that there was no NJTPA policy governing those expenditures.

2.4 TECHNICAL ADVISORY COMMITTEE FINDINGS

The Technical Advisory Committee (TAC) discussion for this effort included a presentation that highlighted the overall themes discussed above. It included an overview of the refinement project, along with a presentation of the quantitative analysis, noting the key themes across the categories. In addition, there was discussion of how the data is presented and what it means for the RCIS. There was a general recognition of how some bigger, longer-term projects can impact categories and shift percentages, and how those may be a factor in, but not necessarily dictate, changes in allocation targets, similar to how fluctuations in the overall economy (like steel price changes) can impact these changes as well. There was also some discussion of whether components of spending should be tracked and how, if it all, they would prove to be useful for the

NJTPA. The quantitative analysis demonstrated that there has been a gradual expansion in non-RCIS spending within the total authorized spending. This should be understood further and become a focus of refinement to determine how the RCIS may involve this spending.

In addition to an overview and discussion of the quantitative aspects of the RCIS, there was a discussion of the qualitative aspects of how the RCIS and its components apply to overall regional planning and the visions for the region. The qualitative discussion presented some indicative MOEs of each principle, which were then leveraged in order to understand potential other examples, or concerns that aren't addressed in the current RCIS. Some key themes across the different investment principles included:

- Aspects of certain project types (such as system preservation) may have intended or unintended outcomes for other investment principles. Consequently, funding for certain categories may actually be higher than stated. This may be especially true in matters of system preservation for bridges or roadways, which in many cases expand and enhance the roadway network, well beyond the lower roadway enhancement and expansion spending targets.
- Some investment principles may not be targeted to specific project types, but better represent guidelines for project performance across all project types. This may especially be true for topics such as resilience, which currently do not have a direct link to an RCIS category but may be a theme by which all projects should consider. Sustainability, safety, technology, and freight spending should be evaluated in a similar manner.
- The need for categorization is important and can help drive planning goals forward but should also be considered with overhead and staffing needs at transportation agencies, many of which are very burdened today. The RCIS should balance the need for investments that align with regional goals with programs and processes staff are familiar with to avoid creating additional administrative work.

These conversation points will be taken into consideration for the continuing tasks of the project, highlighting those that best reflect the current priorities of topics for refinement.

3 STRATEGY EFFECTIVENESS

3.1 NEED FOR STRATEGY EFFECTIVENESS

A key objective of the overall refinement is to obtain greater transparency for the RCIS with the goal of increasing its accessibility to the community, improving how the impacts of various types of transportation investments are assessed, and refining the project categories, recommended funding allocations, and project prioritization guidelines contained within to support the advancement of the NJTPA's planning priorities and desired performance outcomes. This was covered under Task 2, Strategy Effectiveness Assessment. The objectives of this task were to:

- Conduct a literature review to outline the best practices for project funding/investment prioritization.
- Provide a set of measures of effectiveness and/or performance metrics to assess the performance of various types of projects as they pertain to each RCIS funding category.
- Provide an overview of potential benefits that can be observed from the implementation of various project types for each RCIS funding category.
- Provide relevant data collection/tracking sources and tools to assist in the periodic performance assessment process.

The study team reviewed measures of effectiveness and strategies for both investment strategies and project prioritization tools, along with USDOT guidance and project review documents from multiple levels of government agencies and decision makers. These examples provided a wide range of practices that covered varying performance metrics, planning horizons, and potential impacts on investment decisions.

3.2 PROJECT SELECTION AND PRIORITIZATION PRACTICES

In the development of NJTPA's biennial TIP, there are rarely enough resources to move forward with all project proposals in the TIP. Hence, the NJTPA uses a prioritized (ranked) list of projects and provides this list to the state's two principal implementing agencies, NJDOT and NJ TRANSIT. Like other metropolitan planning organizations (MPOs) across the country, the NJTPA has established a prioritization procedure to evaluate and score projects. Other factors such as the feasibility of project delivery, funding availability, and project timing are considered through consultation and negotiation among MPO staff, county/municipal staff and elected officials, NJDOT and NJ TRANSIT.

The NJTPA Project Prioritization Criteria were originally developed in 1993 based on efforts of what is now known as the Regional Transportation Advisory Committee (RTAC) and the NJTPA Central Staff. The Board has updated evaluation criteria to match federal guidance, national goals, and state goals, such as those adopted in federal transportation legislation (MAP-21 or the FAST Act) or the NJDOT Statewide Capital Investment Strategy (SCIS). The NJTPA uses the criteria to evaluate proposed future investments systematically and objectively, scoring them according to how well they satisfy the goals of the NJTPA's federally required LRTP. Criteria are grouped in accordance with major transportation goals ranging from environmental benefits to user experience and each criterion has a maximum number of associated points. As of the draft 2024-2027 TIP, some examples of the included criteria are:

- Traffic congestion relief
- Air quality improvements and other environmental factors like stormwater management
- Impacts to environmental justice (EJ) or underserved communities
- Access to jobs and existing transportation systems
- Access for non-motorized users
- Replacement of facilities in poor condition
- Improved safety on existing facilities

- Enhanced freight movement

The team reviewed nine separate strategy documents used for investment strategy and prioritization approaches. Table 3 shows a selection of the literature review with three discrete approaches. The Viriginia SMART Scale approach is one of the most relevant peer strategies as it balances long-term goals associated with Virginia's long-term mobility plans along with the reality of the needs for the key transportation agencies represented, Virginia Department of Transportation and Virginia Department of Rail and Public Transportation. The strategy has been considered one of the gold-standard approaches to applying investment strategy to project selection. The Delaware Valley Regional Planning Commission's TIP benefit criteria provide a geographically-close peer agency example for project prioritization that uses quantitative criteria to develop benefit-cost analysis and utilizes that tool to help select projects. Finally, the Wales Road Review provides a goal-specific approach to analyzing the potential impact of highway projects and provides an independent assessment of which projects should move forward, adjusted, or even cancelled based on these criteria.

Table 3: Selected Literature Review Examples

Document	Purpose	Methodology
Virginia SMART SCALE	Used to prioritize funding of planned projects based on their connection to statewide goals (Virginia Transportation Plan, VTrans).	SMART SCALE quantifies project benefits for six categories, each with their own weighting factors which vary based on the geography of the project location. The overall project benefit is computed relative to its cost to derive a benefit-cost ratio.
Delaware Valley Regional Planning Commission – TIP-LRP Project Benefit Criteria	Used to prioritize funding for proposed projects in the Transportation Improvement Plan (TIP) based on their alignment with "Connections 2050 Long-Range Plan".	The prioritization process uses a project benefit evaluation criteria that consists of seven categories. These are used to score projects and create a ranking between them based on their total benefit to cost ratio. This ranking is then used to make final recommendations.
Wales Road Review	Used to examine alignment of projects with Welsh Government's vision and policies and provide a recommendation for funding consideration.	Uses a qualitative framework consisting of a set of project purpose/conditions, and criteria in nine categories to suggest if a project should or should not proceed for funding.

3.3 INVESTMENT CATEGORY REVIEW OF PERFORMANCE

To provide an internal review of opportunities for a performance-outcomes-based approach in the RCIS, the team reviewed the following topics for each investment category:

(a) Existing spending allocations in each investment category

(b) A review of key measures of effectiveness that can be used to evaluate the project and program types in each investment category

(c) Lessons learned and other applicable performance-oriented outcomes

(d) Examples of observed changes for how agencies across the US were able to demonstrate improvements in line with the relevant measures of effectiveness.

Table 4 provides some insights for selected investment categories. For safety, general metrics like a reduction in crashes or incidents has been an industry-wide measurement of success for projects intended to promote safety. This can be achieved in multiple ways, like the safe routes to school program which combines education and specific infrastructure applications to lower crash rates near schools. The road expansion example provides an alternative approach, using relevant metrics of the disbenefits of projects like lane expansion. In these cases, the direct impact of road expansion on a metric like vehicle miles traveled (VMT) may not align directly with regional goals. However, VMT increases directly relate to potential outcomes like increases in emissions, absolute crash numbers, and roadway wear and tear that should be accounted for against expected benefits like travel time savings or new vehicular connections. Active transportation metrics similarly relate expected impacts of projects like adding bike-lanes or sidewalks to increases in these trips. These trips are associated with benefits that relate directly to regional goals like health or reduction in emissions that align directly with RCIS principles.

Table 4: Selected Investment Category Measures of Effectiveness and Results

CATEGORY (PROGRAM OR PROJECT TYPE)	RELEVANT MEASURES OF EFFECTIVENESS	OBSERVED RESULTS
Safety (Safe Routes to School Program)	• Reduction in crashes and incidents within a set distance of schools • Reduction in pedestrian crashes on key corridors	• Efforts by NJDOT and NYCDOT to improve safety in priority school zone areas have shown to reduce pedestrian injuries. Improvements include sidewalk improvements, pedestrian crossing islands, high visibility pavement marking, proper lighting at crossings, proper signage which have shown a pedestrian crash reduction in a range of 25 – 40 percent
Road Expansion (Lane Expansion)	• Corridor specific-vehicle miles traveled • Region-wide vehicle miles traveled	• In order to estimate the impacts of induced demand, a calculator was developed for CalTrans in California that used estimates for VMT elasticity of around 1.0 for interstates, based on a number of studies that observed VMT increases between 0.772 and 1.34. This means that for every 10 lane miles added, VMT per new lane-mile is expected to grow 77-134%. In other words, a 10-mile long stretch of highway that serves 10,000 daily VMT and adds an additional lane would expect to increase daily corridor VMT between 10,770-11,340. For smaller arterials, an elasticity of 0.75 is used, based on observed elasticities between 0.67 and 0.89. These studies reviewed examples across the US.

Active Transportation (active transportation network expansion)	• Increase in cycling trip shares across all trips • Increase in share of population meeting CDC physical activity guidelines	• The conversion of a bike lane to a protected bike lane increased daily cyclist shares by 56% on an Upper West Side avenue in New York City. • Access to sidewalks equates to a 20% greater likelihood of being physically active compared to those with no access to sidewalks • Proximity to trails is associated with people being 50% more likely to meet physical activity guidelines and 73%- 80% more likely to use a bicycle

To help guide the development of potential metrics and ways to apply them to investment evaluation, the team developed a table of data sources and applicable metrics for each category, shown in Table 5.

Table 5: Strategy Effectiveness Data and Modeling Sources

RCIS CATEGORY	DATA SOURCES	METRICS
Public Transit	Transit Operations Dashboards, Transit Ridership Reports/Boardings & Alightings as tracked by NJ TRANSIT	• Change in ridership as a percentage of all trips in a specified area • Change in transit system reliability (on-time percentage) • Change in transit area coverage (geographic area and population)
State of Good Repair/Maintenance	NJDOT Asset Management Report, NJ TRANSIT Asset Management Performance Targets	• Change in number of system/asset failures • Change in delay due to repairs or failures • Change in repair costs or emergency crew labor hours
Safety	FHWA CMF Clearinghouse, NJDOT Crash Database	• Change in total crashes in an improvement area (fatal, injury, non-injury) • Change in number of at grade transit incidents in an improvement area • Change in rate of injury per capita and/or VMT change in rail-miles traveled • Change in rail-miles traveled between collisions with a person or vehicle
Roads	NJDOT Traffic Volume Counts, NJTPA Congestion Management Process, NJTPA's Travel Demand Model (NJRTM-E), Induced Demand Calculators	• Change in travel time delay and LOS • Change in travel time reliability • Change in average VMT per trip

Freight	New Jersey Freight Plan, NJDOT Multimodal/Freight Dashboards, Freight Analysis Framework	• Change in highway travel time reliability • Change in rail time reliability • Change in truck travel time delay • Change in amount of total freight carried
Intelligent Transportation Systems	ITS Pilot Studies, Monitoring systems included during project installation	• Change in travel time delay along ITS routes • Change in mode-share along ITS routes • Change in number of accidents along ITS routes • Change in CO2 emissions along ITS routes along ITS routes
Active Transportation	NJDOT bicycle and pedestrian safety and traffic data, Bike counts and estimates from network models (Replica), Bike mode share as a percentage of trips for different purposes (commute trips, errand trips, recreational trips)	• Change in total bicycle trips in an area (mode split, bicycle VMT per capita, facility throughput) • Change in bicycle collisions in an area • Change in bicycle travel time, delay, LOS
Travel Demand Management	NJTPA Transportation Demand Management & Mobility Plan, NDJOT Traffic Volume Counts, NJTPA's Travel Demand Model (NJRTM-E), Land Use and Municipal Development Plans (CoStar), Tax maps which reflect land-value near transit amenities	• Change in access/proximity to transit stops (population and/or number of households within a specified radius of transit stop) • Change in VMT (total, per capita) • Change in mode shift
NEW CATEGORY: Environment/Climate Investment	New Jersey Climate Change Resilience Strategy, NY-NJ-MSA Climate Action Plan, FEMA Floodplain Maps, Plan 2050 Climate Change and Transportation Background Paper, Passaic River Basin Climate Resilience Planning Study	• Reduction in evacuation route lane-miles within FEMA 100-year floodplain • Reduction in NJ TRANSIT critical infrastructure at risk (such as the economic value at risk if critical infrastructure were to be damaged or disrupted from a climate event of a certain level)

NEW CATEGORY: Placemaking and Land Use Investment	NJTPA's Bicycle and Pedestrian Access to Transit Stations study, Morris Canal Greenway Study, NACTO Urban Street Design Guideline	• Decrease in unprotected street crossings within x feet of schools • Increase in air quality within ¼ mile of highway impact project • Increase in pedestrian mode share for trips within ½ mile of placemaking or other downtown improvement project

3.4 DATA COLLECTION AND EVALUATION FRAMEWORK

Transportation planning relies on thorough data collection and evaluation, a process encompassing the identification and prioritization of transportation-related concerns, the establishment of goals and objectives, selecting strategies and countermeasures, and the formulation of action plans. This process forms the framework for conducting an assessment of the impact of project performance categories on various metrics, using the latest data. This process is shown in Figure 4.

Figure 4: Data Collection and Evaluation Framework

The general framework for the evaluation of project performance can be summarized as the following:

1) **Defining Goals and Objectives**: Outlining the broader goals and vision of a region, program, and/or project based on the identified challenges/needs. Defining the goals can establish the scope and criteria for performance evaluation.

2) **Identify Performance Indicators/Metrics**: Developing the categories and key performance indicators to be assessed for evaluating project performance based on the goals and scope. This also includes setting specific targets or benchmarks that the region, program, and/or project hopes to achieve from the outcome of a project.

3) **Data Collection and Monitoring**: The collection and tracking of data over a period of time as it relates to the project performance metrics/indicators. The data collection process can involve several techniques/tools and can be used to identify baseline conditions, trends, and patterns. Section 4 shows a detailed list of data collection sources relevant to the NJTPA's funding categories. If a project is implemented, data collection will be used to monitor data to support the periodic assessment of the project to measure the overall benefits (performance before versus after implementation). If a new project is proposed, data collection/monitoring supports in evaluating baseline conditions, and collected data for similar projects that have already been implemented can be used to assess expected project performance.

4) **Assess Program/Project Performance**: Analyzing collected data as it pertains to each performance category/metric to compute the outcomes of a program/project. This step quantifies the benefits of a project over a period of time by measuring the change in performance from before and after implementation.

5) **Select Future Strategies**: The project performance results guide decision-makers to strategize future action plans and allow them to efficiently allocate future funding/investment.

Simple evaluations of performance prior to the implementation of a project or program and after can be completed quickly and do not require extensive training. It is important that the evaluation considers other factors that might influence outcomes to properly identify the true effectiveness of the project or program. Ideally, a database should contain all the information needed to perform a before and after evaluation in one location. Essential data include the location and description of completed improvements, and other historical geometric and traffic information. This can also assist with future planning by allowing for comparing the observed results of a group of improved/treated sites to a group of similar but untreated sites. Though advanced modeling can help add precision to performance evaluation, planners can work to assess performance more generally by comparing outcomes of projects or programs that have been implemented in places similar in geography, in socioeconomic conditions, or where users of the project or program have similar characteristics.

3.5 TECHNICAL ADVISORY COMMITTEE FINDINGS

Initial findings on project prioritization and performance metrics were presented to the TAC. During the meeting, feedback was received on how other project prioritization tools and capital planning strategies may relate to the NJTPA's capital planning and programming process. TAC members agreed that the RCIS has a "feedback" relationship with capital planning, and many performance measures and project prioritization metrics align with guidelines for the RCIS. There was commentary that because the project prioritization process is being refined in the coming months, it may make sense to consider clear connections between the RCIS and capital planning as part of the RCIS refinement. Other recent developments and criteria updates in topics such as environmental justice should also be considered in the RCIS refinement.

The TAC then reviewed performance measures for RCIS categories and provided feedback on their effectiveness in rating projects and how well they match actual needs in the transportation network. For categories like Public Transit and Safety, the TAC provided other measures that are used by transportation planners that are important to these projects, such as coverage area for public transit or exposure-based metrics for measuring crashes, which helps consider safety across travel modes. Other performance measures may benefit from improved methodologies like data collection for active transportation, or ITS where benefits such as time savings or travel reliability can be measured.

Finally, it was also noted how competing priorities and/or resource constraints hinder the ability to achieve and measure certain performance goals. This was discussed in the context of safety improvements, where limitations such as costs, project delivery constraints, and leadership-driven priorities might hinder safety programs or specific features that could improve safety performance, even if a project is needed for many other reasons. This critique of the effectiveness of some performance measures was somewhat similar to the discussion of performance measures for TDM, where TAC members noted that transit oriented development-related metrics do not fully address the benefits of TDM investment.

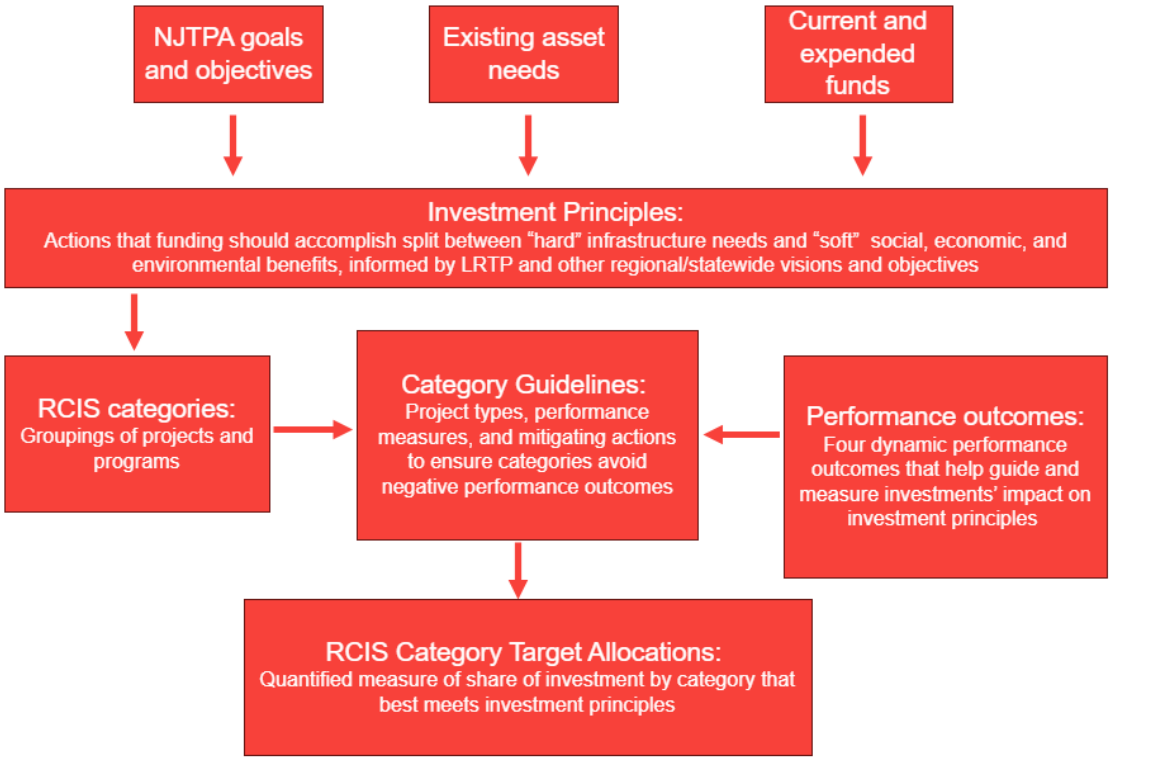
4 RCIS REFINEMENT

4.1 KEY GOALS FOR REFINEMENT

The refinement to the RCIS is based on the review of the existing document and includes its components, alignment with actual trends in expenditures, potential approaches to incorporating performance outcomes to improve the strategy's effectiveness, and feedback from Technical Advisory Committees. Figure 5 shows a general framework for how the updated RCIS was developed. Key features include:

- Rephrases and changes to the investment principles, while retaining their action-oriented approaches and ties to regional goals in NJTPA's long-range planning
- The incorporation of four key performance outcomes that can be used to help evaluate the expected impact of investment across the categories and evaluate their relative benefit to the region.
- Further acknowledge the potential negative outcomes of investment in certain categories or especially in the lack of investment of for other categories that have high potential positive outcomes.
- Incorporate all capital expenditures under NJTPA purview into the RCIS through a re-allocation of projects in categories and the addition of four new categories.
- Refinement of guidance, including the placement of guidance for categories instead of principles and a more systemic approach to addressing ways to improving outcomes or mitigating negative outcomes
- Adjust target expenditures to account for the new categories and the expected level of positive impact across the performance outcomes of each category.

Figure 5: RCIS Refinement Approach



4.2 REFINEMENT TO INVESTMENT PRINCIPLES

Investment principles were reconsidered based on updates to the LRTP, which considers the long-term needs and opportunities of the transportation system. The nine investment principles listed below are short policy statements intended to guide infrastructure investment in the NJTPA region. These principles are based on goals and objectives of long range transportation planning and other associated regional visions and reflect actions the region should take across the full suite of projects and programs. Investment principles address the investment categories by highlighting intended projects, and are the basis of RCIS category guidance that shapes the attributes of projects and programs to be planned and delivered. Not every principle is reflected in every RCIS category, but a capital plan that can demonstrate positive action across these investment principles helps ensure that the region's transportation network meets the desired policy outcomes.

1. Plan and design all projects and programs to achieve regional planning goals and measurable **performance outcomes**

   The performance outcomes that guide effective measurement of transportation investment benefits and help identify the right target allocations per investment category are explored further in Section 4.3.

2. Preserve and make the transportation network more **resilient**

   The existing transportation system requires large expenditures for maintenance, preservation, and repair. Investments should be made to adapt to risks associated with sea level rise, extreme weather, homeland security, and other potential threats. Investments should consider criticality of infrastructure, vulnerability, and level of risk.

3. Engineer, educate, and enforce transportation **safety**

   A safe system approach, which works by building and reinforcing multiple layers of protection to both prevent crashes from happening in the first place and minimize the harm caused to those involved when crashes do occur, should be explicitly incorporated in the planning, design, and implementation of all investments.

4. Expand and support **public transit and shared rides**

   Investment to improve the region’s extensive transit network should be a high priority, including strategic expansions to increase capacity and to serve new markets. Support should be given for ridesharing and first-last mile strategies and transit-supportive land use.

5. Support **active transportation** and **complete streets**
   All transportation projects should promote walking, bicycling, and other active transportation modes wherever possible. Roads and streets should balance capacity for all appropriate forms of travel considering their location, context, and function.

6. Move **freight** more efficiently

   Investments should be made to improve the efficiency of goods movement because of its importance to the region's economy and quality of life.

7. Improve **roads, add few; supporting resource-sensitive land use** and **reconnecting communities**

   Road investments should focus on making the existing system work better, and road expansion should be very limited without compromising the tremendous accessibility provided by the existing roadway system. Opportunities to facilitate more resource-sensitive land use policies that lower environmental impact and mitigate disruption to communities by roadways should be considered.

8. Manage **travel demand** and **efficiently operate** the transportation system

   Investments should support motorized trip and vehicle miles reduction, and transportation system management should improve information flow and operational coordination.

9. **Leverage technology**, including micromobility and electrification

   Investments should take advantage of technological advances that make the transportation system work smarter, more efficient, more equitable, and use clean and renewable energy.

Investment principles have been tied to investment categories where these principles can be implemented in transportation investment. As shown in Section 4.4, investment categories contain specific guidelines that intend to lead investment in projects and programs that can best implement the principles.

4.3 PERFORMANCE OUTCOMES

Performance outcomes, drawn from established NJTPA planning goals, measures, and targets, frame how transportation serves the region and how its performance may be improved through wise investment. Outcomes are identified in the first investment principle.

- Environmental improvement and climate resilience – Projects and programs work to mitigate the transportation networks adverse climate impact, remediate polluted areas associated with transportation, or adapt infrastructure to withstand storms, weather, and other climate impacts.
- Prosperity, equity, and vibrant communities – Projects and programs work to promote economic growth for all users by spurring additional economic development, connecting different communities to one another, especially those that may have been separated by developed infrastructure, and connecting communities to social, recreational, and health-based resources.
- Safety and health – Projects and programs work to improve crash and injury rates from existing conditions, especially for the most vulnerable users in dangerous locations. Projects and programs promote healthier conditions for individuals like active transportation modes or for society like improving air quality.
- Travel accessibility and reliability- Projects and programs work to make travel across all modes more accessible by adding service and infrastructure for travel modes that may not currently exist. Projects and programs also work to improve travel reliability by lowering the travel time variance and improving travel conditions across all modes.

Potential impacts on performance outcomes were identified from technical research on typical projects and programs. Measures of effectiveness that might be used to track the performance outcomes were considered. These factor into the positive, neutral, and negative designations that are qualitatively described for each investment category. Explore investment categories to see how impacts for each performance outcome were considered.

4.4 INVESTMENT CATEGORIES

The refinement of investment categories included four main steps to accurately capture expected investment within the RCIS, adjust target allocations from their previous levels, and accurately account for how well expected investment allocations aligns with the targets. The first step involved the identification of new categories to ensure that all funding had a relevant category. A significant increase in spending on environmental programs, including climate adaptation and mitigation programs created a need for a new investment category that grouped these themed projects and programs together. This

category is primarily supported by refined investment principles which call for resilience in the transportation system and an emphasis on transportation projects that have less environmental impact. Though projects like transit expansion can have positive impact on the environmental improvement and climate resilience performance outcomes, ultimately projects with direct environmental or climate-based improvements were considered for this category.

To identify projects to be included in this category, key search terms were used to identify projects or programs that might be re-allocated. The search terms are shown in Table 6. Searches yielded 58 instances of keyword use, with 31 being relevant to the subject matter, and yielding 23 recodes. Pre-existing RCIS categories with projects that resulted in recategorizations included: Environment/Air Quality (non-RCIS) (7 projects); Road Preservation (6 projects); TDM (3 projects); Bridges and Road Enhancement (2 projects each); and Transit Preservation, Safety, and Overhead (Non-RCIS) (1 project each). The re-allotment process for environment and climate projects prioritized the environmental benefits when a project or program was considered for evaluation. This means that when projects or programs include one of the search terms shown in Table 6, that project was automatically re-categorized to Environment and Climate, even if other aspects of the project may include typical maintenance work aligned with preservation categories. The re-allocated projects composed about $149 million dollars in investment per year, or 3.8% of average annual investment in the 2024-2033 capital program.

Table 6: Environment/Climate Category Search Terms

TERMS	INSTANCES	RELEVANT	NOTES
mitigation	17	4	most “mitigation” involves rockfall or traffic
drainage	13	7	primary purpose must be flood mitigation
flood	5	4	
raise	4	0	
CMAQ	4	2	
air quality	3	3	
storm water	3	2	
emission	2	2	
pollution	2	2	
Protect	2	2	
climate	1	1	
carbon reduction	1	1	
electrification	1	1	
hardening	0	0	
adaptation	0	0	
idling	0	0	
road raising	0	0	also tried: raise road, road raise

To consider future funding needs and projects that may have high potential performance outcomes, an additional category was identified to group Placemaking and Land Use projects. This category of projects is intended to include transportation-based investment in programs like downtown revitalization, area master plans, reconnecting community projects like highway capping, highway-to-boulevard conversions and other social improvement measures. The Placemaking search terms uncovered only four keyword uses, two of which were relevant to the subject matter with only one project from the Economic Development (non-RCIS) category resulting in a recategorization.

Table 7: Placemaking and Land Use Category Search Terms

TERMS	INSTANCES	RELEVANT	NOTES
economic	1	1	
transit village	1	1	
business	1	0	
caps	1	0	reference was to pier caps

Further evaluation was given to the full pot of previously uncategorized investment programs, which before any re-allocation made up about 18.5% of the average annual investment from the 2024-2033 capital program. After the environment/climate and placemaking re-allocation, as well as some re-allocation of overhead programs like maintenance vehicle purchases to preservation or utility relocation to roadway enhancement, over 15% of un-categorized funding remained. To accurately group these, two new categories were identified: Program Management and Local System Reserve. Program Management, which makes up about 9.1% of the 2024-2033 capital program covers a wide array of planning and support efforts that are critical to the operations of the regional transportation system. Program management covers overhead, consulting services, training, airport operations and security programs, information technology, and planning efforts conducted by NJTPA and its partner agencies. Local system reserve, which makes up about 6% of the 2024-2033 capital program, covers a set group of funds held for local municipality and county project support. This can act as reserve funding to help clear spending gaps on urban aid or local projects.

Finally, smaller re-allocation was considered for preservation projects that may be more accurately considered enhancement or some other program. Major programs like the Route 35/37 interchange were included for its material improvement in traffic flow, including right-of-way purchases to expand the footprint of the roadway. Sign Structure spending was also included as ITS spending. The full list of investment categories and their average annual spending are shown in Figure 6. The corresponding NJDOT Statewide Capital Investment Strategy (SCIS) “new program” categories are included in Figure 6 as well. Note that these category assignments were completed before NJTPA’s re-allocation of projects; as such, there may be some designations that may not fully align with the RCIS investment category (i.e. Highway Capital Maintenance SCIS New Program in Roadway Enhancements RCIS investment category).

To provide clarity in its organization, the 16 individual categories are organized into groups that align their general impact on the existing network: System Improvement, System Support, and System Preservation.

- System Improvement: This investment category group focuses on projects and programs that provide for better service and amenities with quality, reliability, and performance of the system beyond what exists today.
- System Support: This group consists of auxiliary programs that cover a wide array of planning and support efforts that are critical to serve the operations of the regional transportation system.
- System Preservation: Given its enormity and age, the existing transportation network demands significant funding to maintain a state of good repair. This group of categories includes maintenance and rehabilitation of bridges, public transit facilities, and roadways in the NJTPA region that maintain state of good repair without materially improving performance beyond their current design.

Figure 6: 2024-2033 Capital Program Reallocated Investment Categories

Investment Group	Investment Category	NJDOT CIS	Average Annual Spending		Updated Target
System Preservation	Bridge Preservation	Bridge Rehab and Replacement; Deck Rehab and	$808.4	20.6%	14.8%

Investment Group	Investment Category	NJDOT CIS	Average Annual Spending		Updated Target
		Replacement; Local Bridges; Bridge Capital Maintenance; Bridge Management; NJ TRANSIT Bridges; Railroad Overhead Bridges			
	Transit Preservation	Rail Infrastructure; Bus-LRT Infrastructure; Bus-LRT Rolling Stock	$1,282.8	32.7%	26.6%
	Road Preservation	Dams; Highway Capital Maintenance; Highway Resurfacing; Drainage; Facilities and Equipment; Signs; Safety Improvements; Operational Support; Transportation Support Facilities; Road Assets	$317.6	8.1%	12.6%
System Improvement	Road Enhancement	Highway Capital Maintenance; Highway Operational Improvements; Local Roadway Improvements; Rest Areas; Right of Way and Utility Road Assets	$63.8	1.6%	1.0%
	Road Expansion	Major Widenings	$143.1	3.6%	1.0%
	Transit Enhancement	Bus Passenger Facilities; Rail Passenger Facilities; Ferries; Section 5310 Program; Section 5311 Program; Systemwide; Transit Enhancements	$101.6	2.6%	5.0%
	Transit Expansion	Ferries; New Initiatives	$31.3	0.8%	5.0%
	Dedicated Freight	Maritime; Goods Movement	$79.2	2.0%	2.0%
	ITS and Incident Management	Intelligent Transportation Systems	$99.5	2.5%	3.0%
	Travel Demand Mgmt.	Rail Infrastructure	$37.4	1.0%	1.0%
	Direct Safety	Bike/Pedestrian; Construction; Facilities and Equipment; Highway Operational Improvements; Local Aid, Other Programs; Rockfall Mitigation; Safety Capital	$178.2	4.5%	3.0%

Investment Group	Investment Category	NJDOT CIS	Average Annual Spending		Updated Target
		Maintenance; Safety Improvement; Safety Management			
	Pedestrian and Bicycle	Bicycle/Pedestrian	$16.5	0.4%	3.0%
	Environment/ Climate	Air Quality; Bridge Rehab and Replacement; Demand Management; Drainage; Landscape; Local Roadway Improvements: Planning Programs and Studies; Project Scoping and Design	$148.7	3.8%	5.0%
	Placemaking and Land Use	Local Aid, Other Programs; Transportation Enhancements	$23.0	0.6%	2.0%
System Support	Program Management	Construction; Contractor Support; Local Aid, Other Programs; Local Aid, Discretionary; Operational Support; Planning Programs and Studies; Program Implementation Costs; Project Scoping and Design; Regional Planning and Development; Right of Way and Utility; Systemwide	$357.4	9.1%	9.0%
	Local System Reserve	Regional Planning and Development; Local Aid to Counties; Local Aid to Municipalities	$237.3	6.0%	6.0%

4.5 POLICY DOCUMENT

The policy document, which is akin to the previous policy document included as Appendix C in NJTPA's *Plan 2050*, was developed to set forth the investment principles, communicate the incorporation of performance outcomes to the strategy's effectiveness, and describe all investment categories including the expenditure allotment target for each category. An appendix is also included to provide a qualitative overview of impacts for each category across the four performance outcomes. These impacts were key to helping adjust the target allotments, though the policy document only displays the new targets.

The policy document generally follows the flow of the previous policy document, beginning with an overview of the RCIS' relationship to NJTPA's long-range planning and other efforts. A section on the investment principles is moved forward before the discussion on categories to demonstrate how the principles are the foundation of the RCIS. Performance metrics

are reviewed next, with investment categories following. The investment category groups are discussed starting with System Preservation, System Support, and finally System Improvement. Guidelines for each category are included to help project planners understand what actions can be made as part of the investment decision-making to maximize benefits and mitigate potential negative outcomes.

5 WEBSITE

5.1 PURPOSE AND OBJECTIVE FOR WEBSITE

An online web application was developed to inform stakeholders about the interrelated elements of the NJTPA RCIS. Both high level and detailed information about the RCIS and its elements is included to provide information to regional stakeholders, as defined in the RCIS policy document.

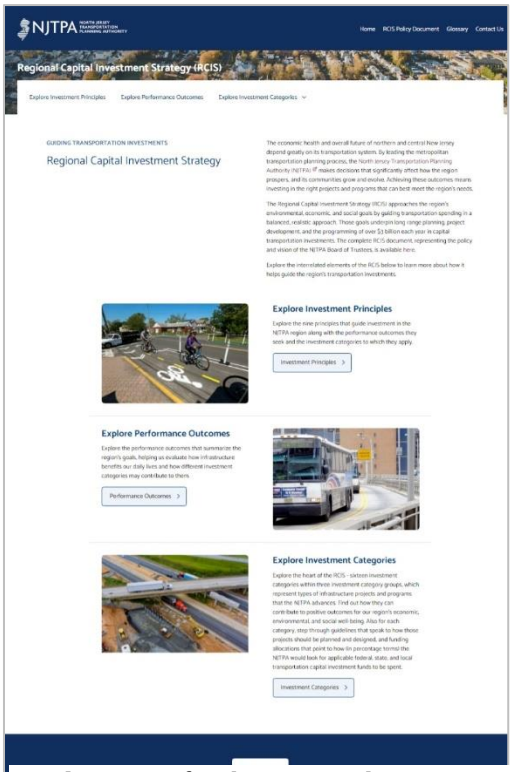
5.2 DESIGN APPROACH AND COMPONENTS

The website user interface and navigation menu are designed to align with the existing NJTPA agency and online brand, inclusive of all design elements (logo, color palette, fonts). Page layout uses responsive design for muti-device, multi-platform display, and design and layout follow usability and accessibility (Section 508) design principles to facilitate ease of access to information and an optimal user experience.

The landing page content summarizes the RCIS purpose, need and vision statement, followed by feature boxes highlighting the three components of the RCIS, which each link to detailed information. A simple navigation menu with action-oriented link titles appears on all web pages and clearly defines user options: *Explore Investment Principles*, *Explore Performance Outcomes*, and *Explore Investment Categories*.

Each content section includes an introductory statement defining the element's role in the RCIS, followed by detailed information. Most information is displayed in tabular and chart formats to better illustrate the interrelationship among RCIS elements. Thematic icons for performance outcomes, and color coding of RCIS thematic categories are used throughout content pages to visually connect performance outcome themes with RCIS categories and anticipated transportation system performance impacts. Additionally, text links are used extensively to connect related content across the three content areas.

Additional links in the application header include a download of the RCIS policy document, a glossary listing RCIS-related terminology, and a data form to submit questions or comments about the RCIS that forwards to NJTPA staff.



Landing page for the RCIS online application, hosted by NJTPA.

5.3 ALIGNMENT WITH OTHER NJTPA TOOLS

- NOTIS

6 CONCLUSIONS

The RCIS is intended to provide guidance and direction for decision makers on how goals and objectives of long-range planning can be incorporated into investment decisions and demonstrate to the public how the investments we make in transportation systems play a role in the sustainability, safety, reliability, and prosperity of our region. To accomplish this, the RCIS organizes all general spending by a category, and assigns a target allocation for funding that is consistent with needs of the current system and the potential for those categories to positively affect performance outcomes centered around our regional objectives.

While the RCIS isn't designed to help prioritize any one project or program, it does help us understand what outcomes may be achieved when we spread our investments across the transportation needs of the region. Ultimately, the target allocation should reflect the ideal level of funding to maximize the benefits of each RCIS category. If investment is significantly lower for a certain category than the target, the performance outcomes and benefits detailed for each RCIS category may not be achieved. If investment is significantly higher than a target allocation, there may be a corresponding lack of investment in other RCIS categories that limits performance outcomes across all investments.

Given other sources of transportation system investment, the RCIS target allocations should not be viewed as a required threshold for successful implementation. The precise levels of funding applied to the various spending categories may vary significantly from year to year. Thus, successful implementation of capital investments is achieved when investment projections are close to their target across all categories over the course of a long-term capital program. Successful implementation can also be achieved when investments made in smaller categories like road enhancements or road expansion have been made to maximize potential benefits and mitigate unintended consequences.

The RCIS is a living policy and document and is intended to be reviewed and updated as investments are made, new needs and objectives for the region arise, or new challenges present themselves to the region. Table 8 shows examples of future considerations that may be considered for continual improvement of the RCIS. As regional investment in preservation and state of good repair continues, its overall need may be lessened, and more investment should be considered for system improvement. This is borne out in this update, as preservation target spending has been reduced from 60% of all general funding in the legacy RCIS to 55% in the updated RCIS. Even as regional needs change, the RCIS should remain an important tool to guide transportation investments towards a healthier, prosperous, and sustainable future.

Table 8: Future Considerations for RCIS Refinement

TOPIC	POTENTIAL AREAS FOR REFINEMENT	POTENTIAL EXAMPLES (TBD)
New subjects for investment categories and principles	This refinement process identified two new system improvement categories: environment/climate and placemaking & land use investment. These new categories were created in part to better group projects and programs around performance outcomes that align with these categories. But they also were created to help show that there is benefit to project types, particularly in placemaking & land use, that have typically not been done before, such as highway mitigation and reconnecting community projects. As the region's needs evolve and LRTPs attempt to address new challenges and opportunities, projects and programs should be continually reviewed to see whether new categories could better organize forecasted projects and programs. Additionally, future planning goals may inform new principles that may not be represented in today's refined principles.	Investment categories that reflect potential disruptors like large scale EV adoption; investment principles that consider future disruptors like autonomous vehicles
Regionally significant project alignment	The RCIS gives guidance on supporting major investments like the expansion of Hudson River Tunnels for expanded transit capacity, but do not consider these projects inside the scope of the RCIS. The RCIS should continue to align investment categories to complement the planning goals of these major projects and help ensure positive performance outcomes.	Further develop guidance on how to ensure mode shift to transit as the scope of Gateway comes into focus; develop guidance on potential freight investments if projects like Cross Harbor Rail or other regional investments gain traction
Align RCIS deliverables with other NJTPA processes	Position approval of revisions to RCIS investment categories and targets so that other LRTP or TIP updates can utilize the updates. With the RCIS better aligned to relevant NJTPA performance outcomes, explore specific channels through which the RCIS can inform project prioritization. This may help inform what projects might best serve the region's investment principles and overall long range goals.	Project recategorization is agreed upon before the finalization of the financial model for LRTP updates

Explore further opportunities to better communicate the RCIS structure	The RCIS' strength in directing investment lies in its ability to be utilized by planners and decision makers to guide the selection and programming of projects. Collect feedback on areas of confusion or misunderstanding with the RCIS and strategize ways this can be better communicated.	Category groups are a useful way to help communicate the intended outcomes of categories, but may confuse RCIS users who are trying to determine how spending is split amongst categories
Multi-faceted projects and programs and investment category designations	Project descriptions from the 10-year capital program are usually too short or too general to help ensure correct category alignment. Additionally, many projects and programs could have project elements that would be subject to multiple categories.	

A. APPENDIX – RCIS CATEGORIZATION METHOD

To help guide categorization of new or changed projects and programs in the 10-year capital plan to the appropriate RCIS category, this brief guide is intended to be used to help simplify the categorization process based on alignment with the NJDOT Statewide Capital Investment Strategy (SCIS), project description, and other information available. These steps should be used as an "order of operations" for categorization – subsequent steps should be used if the previous step does not help determine the correct category. For instance, if step 1 does not provide an appropriate category for the project, step 2 should be used to categorize. If step 2 does not provide an appropriate category, step 3 should be used. The RCIS categories have been set up such at every project and program inside the 10-year capital plan should have an appropriate category to sit in.

Step 1. Statewide Capital Investment Strategy Alignment

Categorization of projects and programs that are included from NJDOT should try and consistently align with the Statewide Capital Investment Strategy (SCIS). Table 9 shows the full list of SCIS program categories and subcategories that provide direct guidance on specific categories. However, some SCIS categories and subcategories could potentially be appropriate in multiple RCIS categories. In these cases, RCIS categorization should move to Step 2. The recommended RCIS categories can only be used as an approximation, even when there is only one recommended RCIS Category listed; staff should review project and program descriptions and use best judgement to ensure its best fit within that category. Particular attention should be paid to the term "maintenance." The RCIS categories for preservation (Bridge Preservation, Road Preservation, and Transit Preservation) are meant to be used for project/programs that maintain "hard" (physical) assets. For projects/programs that maintain "soft" (non-physical) assets, the Program Management category should be used.Finally, if a project or program is submitted to the capital plan that has not been given a designated SCIS program category, Steps 2 and 3 should be followed.

Table 9: SCIS - RCIS Crosswalk Table

SCIS PROGRAM CATEGORY	SCIS SUBCATEGORY	Recommended RCIS Category
Airport Assets	Aviation	Program Management
Bridge Assets	Bi-State Bridges	Bridge Preservation
Bridge Assets	Bridge Capital Maintenance	Bridge Preservation
Bridge Assets	Bridge Capital Maintenance - O&M	Bridge Preservation
Bridge Assets	Bridge Management	Bridge Preservation
Bridge Assets	Bridge Rehab and Replacement	Bridge Preservation
Bridge Assets	Bridge Safety Improvements	Bridge Preservation; Direct Safety
Bridge Assets	Culverts	Bridge Preservation; Road Preservation; Environment/Climate
Bridge Assets	Dams	Bridge Preservation; Environment/Climate

SCIS PROGRAM CATEGORY	SCIS SUBCATEGORY	Recommended RCIS Category
Bridge Assets	Deck Rehab and Replacement	Bridge Preservation
Bridge Assets	NJ TRANSIT Bridges	Transit Preservation
Bridge Assets	Railroad Overhead Bridges	Bridge Preservation
Bridge Assets	Sign Structures	Bridge Preservation; ITS and Incident Management
Capital Program Delivery	Construction	Program Management
Capital Program Delivery	Contractor Support	Program Management
Capital Program Delivery	Corridor Studies	Program Management
Capital Program Delivery	Operational Support	Program Management
Capital Program Delivery	Planning Programs and Studies	Program Management
Capital Program Delivery	Planning Studies	Program Management
Capital Program Delivery	Program Implementation Costs	Program Management
Capital Program Delivery	Project Scoping and Design	Program Management
Capital Program Delivery	Quality Assurance	Program Management
Capital Program Delivery	Right of Way and Utility	Program Management
Capital Program Delivery	Transportation Grants	Program Management
Capital Program Delivery	Transportation Security	Program Management; Direct Safety
Capital Program Delivery	Unanticipated Expenses	Program Management
Congestion Relief	Air Quality	Environment/Climate
Congestion Relief	Bottleneck Widening	Road Enhancement; Road Expansion
Congestion Relief	Demand Management	Travel Demand Management
Congestion Relief	Highway Operational Improvements	Road Enhancement; ITS and Incident Management
Congestion Relief	Intelligent Transportation Systems	ITS and Incident Management
Congestion Relief	Major Capacity Increase	Road Expansion
Congestion Relief	Major Widenings	Road Expansion
Congestion Relief	Missing Links	Road Expansion
Congestion Relief	NJ TRANSIT Congestion Relief	Transit Enhancement; Transit Expansion; Travel Demand Mgmt.

SCIS PROGRAM CATEGORY	SCIS SUBCATEGORY	Recommended RCIS Category
Local System Support	Economic Development	Program Management; Placemaking and Land Use
Local System Support	Local Aid to Counties	Local System Reserve
Local System Support	Local Aid to Municipalities	Local System Reserve
Local System Support	Local Aid, Discretionary	Local System Reserve
Local System Support	Local Aid, Other Programs	Local System Reserve
Local System Support	Local Bridges	Bridge Preservation
Local System Support	Local ITS Improvements	ITS and Incident Management
Local System Support	Local Mobility Improvements	Local System Reserve; Travel Demand Mgmt.; Road Enhancement; Transit Enhancement; Pedestrian and Bicycle; Transit Expansion
Local System Support	Local Roadway Improvements	Road Enhancement
Local System Support	Local Safety Improvements	Direct Safety ; Road Enhancement
Local System Support	Local System Support	*Potentially Any Category*
Local System Support	NJ TRANSIT Local System Support	Local System Reserve; Transit Preservation; Travel Demand Mgmt.
Local System Support	Other Programs	*Potentially Any Category*
Local System Support	Reg Plng and Project Development	Program Management; Local System Reserve; Travel Demand Mgmt.; Pedestrian and Bicycle; Dedicated Freight; Placemaking and Land Use
Local System Support	Transportation Enhancements	Road Enhancement; Transit Enhancement
Mass Transit Assets	AMTRAK	Transit Preservation; Transit Enhancement; Transit Expansion
Mass Transit Assets	Bus	Transit Preservation; Transit Enhancement; Transit Expansion
Mass Transit Assets	DRPA/PATCO Transit Assets: Facilities & Equipment	Transit Preservation; Transit Enhancement; Transit Expansion
Mass Transit Assets	Ferry Infrastructure	Transit Preservation; Transit Enhancement; Transit Expansion
Mass Transit Assets	Homeland Security	Transit Preservation; Direct Safety

SCIS PROGRAM CATEGORY	SCIS SUBCATEGORY	Recommended RCIS Category
Mass Transit Assets	Light Rail	Transit Preservation; Transit Enhancement; Transit Expansion
Mass Transit Assets	Light Rail Rolling Stock Debt	Transit Preservation
Mass Transit Assets	PANYNJ/PATH Transit Assets: Facilities & Equipment	Transit Preservation; Transit Enhancement
Mass Transit Assets	Rail	Transit Preservation; Transit Enhancement; Transit Expansion
Mass Transit Assets	Rail Rolling Stock Debt	Transit Preservation
Mass Transit Assets	Technology	Transit Enhancement; ITS and Incident Management; Travel Demand Mgmt.
Multimodal Programs	Bicycle/Pedestrian	Pedestrian and Bicycle
Multimodal Programs	Bicycle/Pedestrian Mobility	Pedestrian and Bicycle
Multimodal Programs	Ferries	Transit Enhancement; Transit Expansion
Multimodal Programs	Goods Movement	Dedicated Freight
Multimodal Programs	Intermodal Connections	Transit Enhancement; Transit Expansion
Multimodal Programs	Maritime	Dedicated Freight
Multimodal Programs	Other Modes	Road Enhancement; Program Management
Road Assets	Drainage	Road Preservation; Environment/Climate
Road Assets	Drainage - O&M	Road Preservation; Environment/Climate
Road Assets	Environmental Remediation	Environment/Climate
Road Assets	Highway Capital Maintenance	Road Preservation; Road Enhancement
Road Assets	Highway Capital Maintenance - O&M	Road Preservation
Road Assets	Highway Rehab and Recon	Road Preservation; Road Enhancement
Road Assets	Highway Resurfacing	Road Preservation
Road Assets	Landscape	Road Preservation; Environment/Climate ; Placemaking and Land Use
Road Assets	Landscape - O&M	Road Preservation
Road Assets	Noise Walls	Road Enhancement
Road Assets	Pavement Management System	Road Enhancement; ITS and Incident Management

SCIS PROGRAM CATEGORY	SCIS SUBCATEGORY	Recommended RCIS Category
Road Assets	Quality of Life	Road Enhancement
Road Assets	Signs	Road Enhancement; ITS and Incident Management
Road Assets	Signs - O&M	Road Preservation; ITS and Incident Management
Road Assets	Truck Size and Weight Control	Dedicated Fright Investments
Road Assets	Wetlands Mitigation	Environment/Climate
Safety Management	Bicycle/Pedestrian Safety	Pedestrian and Bicycle; Direct Safety
Safety Management	Rockfall Mitigation	Direct Safety
Safety Management	Safety Capital Maintenance	Direct Safety
Safety Management	Safety Capital Maintenance - O&M	Direct Safety
Safety Management	Safety Improvements	Direct Safety
Safety Management	Safety Management	Direct Safety
Transportation Support Facilities	Facilities and Equipment	Transit Preservation; Road Preservation; Transit Enhancement; Road Enhancement
Transportation Support Facilities	NJ TRANSIT Facilities and Equipment	Transit Preservation; Transit Enhancement

Step 2. Key Term Alignment

If the crosswalk process matching a project's SCIS program category or subcategory to a recommended RCIS category is insufficient, staff should review the project or program for key words in the name and description to determine the RCIS category of best fit. This keyword approach should identify things like expected performance outcomes (such as improved safety or improved resilience), targeted modes (such as improvements involving bikes and pedestrians), or a focus on specific improvements (like technology improvements or congestion relief). When project descriptions do not specify these specific attributes, precedence for certain categories can be set using the following guidelines:

- If a project or program includes system preservation and system improvement attributes for a specific mode, the corresponding system improvement category (i.e., road enhancement, transit enhancement, etc.) should be used.
- If a project or program includes key words that highlight environmental or climate resilience outcomes (see Table 6), the Environment/Climate category should take precedence.

- If a project or program includes key words that highlight economic or community development attributes (see Table 7) the Placemaking and Land Use category should take precedence.
- If the project or program includes electronic technology upgrades (such as for signage, signal optimization, routing, predictive maintenance, and others) the ITS and Incident Management category should take precedence.
- If a project or program includes bike and pedestrian attributes within its description, the pedestrian and bicycle category should take precedence.

Step 3. Intra-agency Consultation

When SCIS program category alignment and key term alignment do not provide a viable recommendation for a corresponding RCIS category, or when questions arise as to the appropriate category, staff from NJTPA Capital Programming and Systems Planning should work together to understand the project description and determine the right category. This review can also help confirm categorization for projects and programs that were categorized under Steps 1 and 2, and correct if further information warrants a different category. Ultimately, categorization for programs may change if the types of projects funded typically fall under a different category. It is best to confirm the specific types of projects funded when project descriptions do not provide these details.