BEST PRACTICES FOR

CIP Development and Promoting Healthy Communities

SECTION 2: BEST PRACTICES IN CIP DEVELOPMENT

FINAL REPORT
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BALTIMORE METROPOLITAN COUNCIL

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BEST PRACTICES IN CIP DEVELOPMENT

A Capital Improvement Plan (CIP) contains capital projects, equipment purchases, and major studies for the Baltimore Metropolitan Council (BMC) jurisdictions. It also tends to include construction and implementation schedules, and financing plans to fund the capital investments. The CIP provides a working blueprint for maintaining and improving the community's public infrastructure. CIPs reflect a jurisdiction's values and goals, financial capacity, and future development.

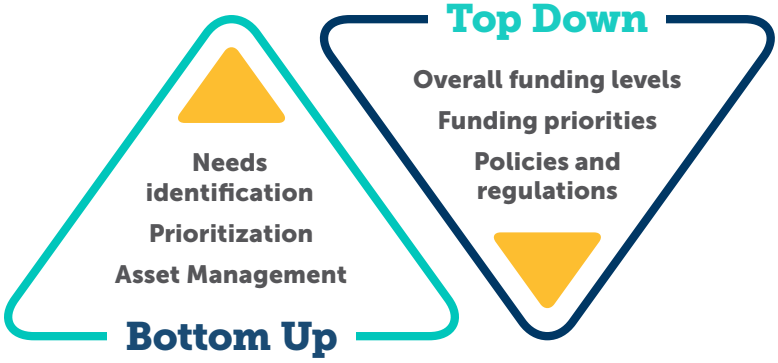
1. STATE OF LOCAL PRACTICE IN CIP DEVELOPMENT

The jurisdiction interviews revealed that that there is no single standard approach for developing county and city CIPs in the region; however, though each CIP process differs in its details, jurisdictions all have some similarities in how they develop their CIPs. Every jurisdiction's CIP process includes:

- Budget office, committees, or commission/council provide departments with budget guidance at the start of the annual budget process.
- Process to identify capital needs. Most often, capital projects originate at the departmental level. Many jurisdictions mentioned the role that existing plans play in helping identify needs.
- Some process for prioritizing projects, although not every jurisdiction has a formalized quantitative process for prioritizing needs.
- Involvement of local leadership, including elected officials, in helping set budget priorities and the overall direction of the capital program. The degree and timing of this engagement varied considerably by jurisdiction.
- Development of multiyear CIPs, typically extending 5 to 6 years into the future.

Broadly, elements of the CIP development process fall into two general planning approaches: a "top-down" approach, where funding priorities and capital allocation decisions are driven by the jurisdiction's administrative or elected leadership; and a "bottom-up" approach, where individual departments have greater autonomy to identify and prioritize their capital needs. In practice, most jurisdictions utilize a mix of top-down and bottom-up planning in developing their capital budgets.

FIGURE 1: *COMPARISON OF CIP APPROACHES*

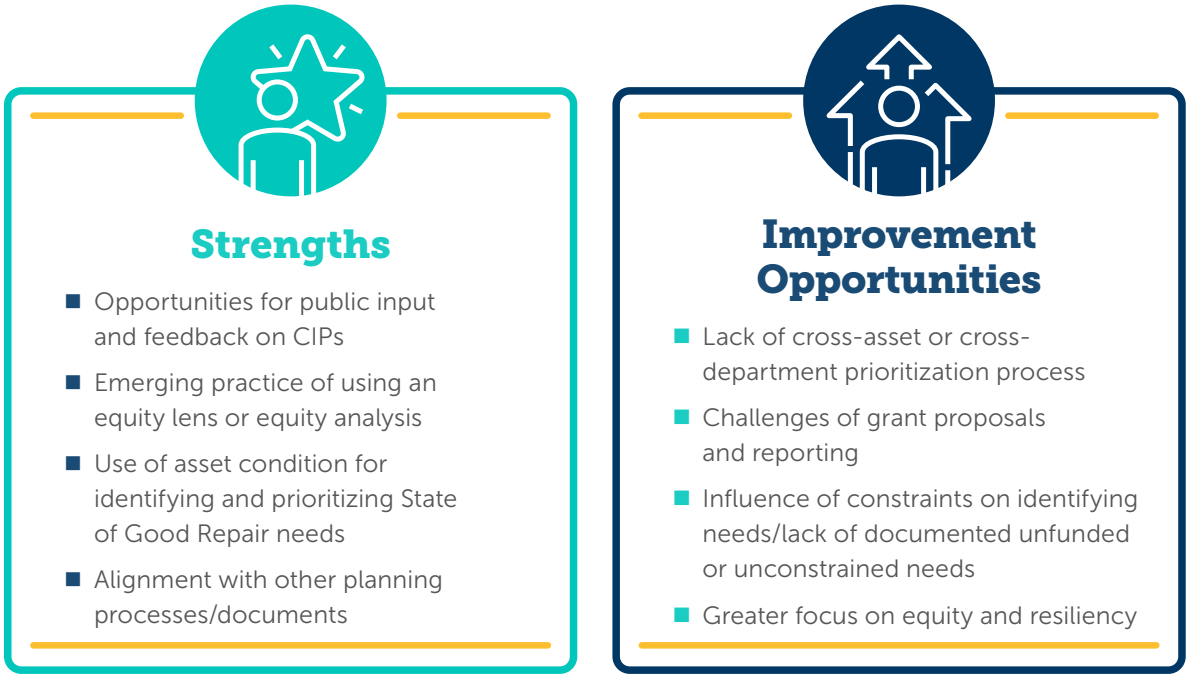


Overall, there is no standard practice for how jurisdictions developed their CIPs. Generally, larger jurisdictions such as Baltimore City utilized a more "bottom-up" approach, delegating responsibility for identifying and prioritizing capital needs to individual departments. More centralized development of CIPs is possible in smaller jurisdictions that manage smaller capital budgets.

In all jurisdictions, elected leaders are engaged throughout the process and they have a say in ultimate direction and shape of the CIP. ***All jurisdictions also include opportunities for public input and consultation in their budgeting process.***

Some of the overarching strengths and opportunities for improvement are highlighted in the following graphic.

FIGURE 2: *STRENGTHS AND OPPORTUNITIES FOR IMPROVEMENT OF CIP PROCESS*



1.1. SCHEDULE

1.1.1. TIMING FOR DEVELOPING CIPS

Each jurisdiction follows its own timelines for finalizing its capital budgets each year; however, all jurisdictions follow a similar calendar. The fiscal year for all the jurisdictions in the region begins July 1, so budgets and CIPs must be finalized prior to that date. Most jurisdictions begin developing their capital budget for the upcoming fiscal year in the early fall, allowing several months of development, review, and revisions over the winter and early spring. Budgets are then approved in late spring or early summer.

1.1.2. PLANNING HORIZON

Key Takeaway: Most CIPs span a 5- or 6-year time period.

Each jurisdiction can define a planning horizon for its CIP, and most CIPs in the region have a 5- or 6-year outlook. Including future years in the CIP allows jurisdictions to better capture the future year impacts of capital investments and the sustainability of current year actions. The CIPs cover the current fiscal year's capital budget plus 4 or 5 additional years for most jurisdictions. The exception is Howard County's CIP, which includes 6 years of detailed capital planning, plus a 10-year outlook.

1.1.3. INTERACTION BETWEEN CAPITAL AND OPERATING BUDGET

For most jurisdictions, capital and operating budget development occurs in parallel, during similar timeframes, but direct interaction between the two budgets is limited. While the development of the two are separate processes, capital investments will ultimately impact operations, and jurisdictions do account for this when developing their CIPs. In Carroll County, for example, no capital project request is considered without an estimated operating impact, which is integrated into an operating plan once refined by the Department of Management and Budget. Similarly, in Howard County, operational costs are considered as part of the evaluation criteria for each capital project; in Harford County, departments provide information each year on the capital impact of the operating budget.

1.2. CAPITAL NEEDS IDENTIFICATION AND INVENTORY

Each jurisdiction has its own way of identifying capital needs, scoring and/or prioritizing those needs, and ultimately developing a list of selected projects. In most jurisdictions, leading departments or agencies identify capital needs; however, many other individuals and groups, both internal and external, contribute to the process of whittling a list of needs down into a finalized capital project list.

BMC Jurisdiction Example: In Carroll County, capital needs are identified by the leading departments but also can come up through commissioner requests from the Board of Commissioners. In addition, County staff also may review projects from prior years that they may still have an interest in pursuing, although this can be heavily driven by the lead agency.

Other methods for identifying potential capital projects include reviewing complaints, bridge or pavement conditions, and/or internal policies.

BMC Jurisdiction Example: The City of Annapolis will be rolling out a new capital improvement planning process that involves the use of a Project Implementation Form (PIF) to document a potential project for CIP inclusion. Then, public works engineers will scope the project and it will progress further toward inclusion in the CIP. The PIF will be used by multiple departments and will be used in the later scoring process after the project is scoped.

Howard County cited the County's General Plan and supporting master plans as helping guide the identification of new capital projects. The County also places a strong emphasis on community input to both identify and prioritize capital investments.

Maintenance needs also may inform capital planning. For departments that are responsible for road and bridge maintenance, pavement management systems can help with project identification and prioritization, although they may not be well integrated into other, external systems. Carroll County, Harford County, and Howard County all use enterprise asset management or pavement management systems to incorporate pavement conditions in project identification.

Methods used to identify capital needs:

- Department feedback and running list
- Stakeholders
- Elected officials
- Asset condition surveys
- Asset inventories
- Existing plans
- Travel demand

Other methods include running, departmental lists. A few years ago, the Harford County Planning Department put together a master list of multimodal transportation projects as an internal document. The list combines state and local transportation capital projects, roadway, bicycle, pedestrian, and transit projects as well as project ideas. These projects are sometimes included in the County's annual priority letter to the Maryland Department of Transportation (MDOT), but large projects may not be funded by the State and an attempt is made to reduce them into smaller components.

1.2.1. DEFINING CAPITAL PROJECTS AND CRITERIA FOR CIP INCLUSION

Some jurisdictions have clear definitions of what constitutes a capital project. In some instances, a jurisdiction may consider the project cost as the deciding factor on whether a project qualifies as an operating or capital expenditure, as some jurisdictions automatically classify project costs exceeding a certain threshold as capital costs. For example, only projects valued at more than $30,000 were eligible for inclusion in Queen Anne's County's FY 2022 Capital Budget.

Other jurisdictions use varying definitions and criteria. Generally, "Capital Projects" are defined as investments that replace, rehabilitate, or expand jurisdiction-owned assets and infrastructure. Capital projects differ from operating expenditures as they are not routine and ongoing expenses, but instead specific costs that can be scoped and defined ahead of time.

The line between operating and capital expenditures is sometimes gray (e.g., classifying technology costs such as software as a service). Costs also may be classified as either capital or operating based on their proposed funding sources. For example, in-house repaving in Baltimore City is funded through the operating budget, but repaving completed by contractors comes out of the capital budget. Similarly, Howard County funds its match on Federal Transit Administration (FTA)-eligible transit expenses through the operating budget, even though these funds go toward capital assets like vehicles and bus stop infrastructure.

After defining what constitutes a capital project, some jurisdictions also have developed clear criteria to determine whether a proposed project is eligible for inclusion in the CIP.

BMC Jurisdiction Example: Baltimore City has a list of criteria to assure that capital projects are necessary to protect public health and safety, that City funding will leverage other fund sources, that the project fulfills a state or federal mandate, etc.[1] Baltimore County has a formal list of project evaluation criteria, including whether a project fits within the guidelines of the Baltimore County Master Plan and its amendments, whether it fits within the guidelines of the State's Smart Growth initiative, etc.[2]

Harford Transit also mentioned how transit is a tool for attracting business and economic development, which means the agency sometimes needs to respond quickly to implement service when new employers move to the area (e.g., for an Amazon distribution center, Harford Transit had to implement services changes within 30 to 45 days).

1.2.2. COST ESTIMATES

Developing accurate capital cost estimates and future-year costs can be challenging, and methods for developing them vary. In most jurisdictions, there is not a standardized process. In developing the budget, departments may be providing estimated costs for projects 12 months before they are designed, and 18 to 24 months before construction starts, which means costs can fluctuate from the time a project is included in a CIP to when construction begins.

One cost estimating method involves spreadsheets. Anne Arundel County starts with a project construction cost estimate that they develop either in-house or by a consultant. Then, they utilize a spreadsheet to apply other costs such as escalations and County overhead charges (as staff time is billed to a specific capital project). This spreadsheet is updated annually. Harford County Parks and Recreation has a standardized cost estimation sheet that they try to update every 3 to 4 years to keep up with construction costs. Escalation rates vary by jurisdiction.

Methods used to estimate costs:

- Spreadsheets
- Cost manuals
- Historic information
- Market research

Other methods for determining costs incorporate historic information, cost manuals—such as the MDOT State Highway Administration cost estimating manual—and/or market research. In some cases, consultants design the facilities and provide cost estimates, which are then reviewed by a jurisdiction engineer, providing a check and balance for costs. In other instances, independent cost estimates (ICE) are developed from historic procurements or peer research.

1.2.3. STATE OF GOOD REPAIR

Maintaining the transportation network and transportation assets in a State of Good Repair requires a system for identifying and tracking maintenance needs. These include sidewalk condition, road pavement condition, transit asset condition, and bridge condition. Most jurisdictions complete regular inspections and use the conditions to prioritize maintenance. County-managed transit systems (e.g., Harford Transit, RTA) are federally required to have Transit Asset Management (TAM) plans in place and continually track the age, condition, and mileage of fleet and facility assets.

In most jurisdictions, roads and bridges are inspected every few years. In addition to condition, Harford County also looks at roadways that may need capital improvements where there are intersections with capacity and crash issues.

BMC Jurisdiction Example: In Carroll County, bridges are inspected at least every 4 years, and maintenance is planned 6 years out based on anticipated repairs; the County also has a long-range bridge plan with a 20- to 30-year outlook that anticipates future needs and pinpoints when the County will need to start pursuing state and federal funding.

Key Takeaway: Asset condition is commonly considered in capital spending prioritization.

As noted above, jurisdictions also may utilize technology to document asset conditions in enterprise asset management or pavement management systems. A few counties are using GIS to map the location, attributes, and conditions of assets such as culverts, pipes, and pavement. Some jurisdictions, like Baltimore County, also are pursuing project management software for the monitoring process, which is currently done manually on paper. ***Regardless of software platform, it is critical to have comprehensive asset inventories and conditions available to identify and prioritize State of Good Repair needs.***

1.3. PRIORITIZATION

Most jurisdictions seek a balance between building new infrastructure and maintaining the existing network. State of Good Repair and maintenance records help to prioritize projects, but in terms of maintenance backlogs, needs often outweigh funding. In general, capital budgets evolve into a constrained form after the project list is gradually whittled down to match available funding. The most frequently cited metric for prioritization was affordability, with many jurisdictions passing spending guidance down to departments, which in turn put together a capital budget that fits with spending constraints.

1.3.1. SPENDING AFFORDABILITY COMMITTEES

In some instances, advisory committees may dictate the amount of total budget available at the onset of the process to help guide prioritization efforts. Howard, Queen Anne's, and Ann Arundel Counties each have a Spending Affordability [Advisory] Committee (SAAC/SAC) that reviews projected revenues and expenditures and makes recommendations in an annual report.[3,4] These committees and their reports influence the amount of funding and debt available over the 4- to 6-year capital plan windows.

1.3.2. EQUITY AND CAPITAL IMPROVEMENT PLANS

Inclusion of an equity lens or equity measures in planning for capital investments is an emerging practice in the Baltimore area. Few jurisdictions have a documented process for inclusion of equity considerations in CIPS at this time, though Baltimore City and Howard County have introduced formal consideration in their processes.

BMC Jurisdiction Example: Baltimore City established an Equity in Planning Committee in 2015, which helps to drive changes in the capital budgeting process and address racial inequity in the city. The committee has mapped and analyzed CIP investments in the city, made recommendations on CIP development, and issued an annual report.[5] An excerpt from the two-page report summary is shown in **Figure 3**.[6]

BMC Jurisdiction Example: Howard County has started to use a system based on BMC's Vulnerable Population Index (VPI) to track whether certain capital investments are being made in an equitable manner **Figure 4**.[7] The County's Complete Streets Policy includes tracking the percentage of new roadway projects or roadway repairs in priority communities as identified by the VPI. The number of projects or repairs located in vulnerable census tracts are divided by the total number of projects and repairs completed countywide to produce a percentage figure.

FIGURE 3: *BALTIMORE CAPITAL PROJECTS EQUITY ANALYSIS EXCERPT*

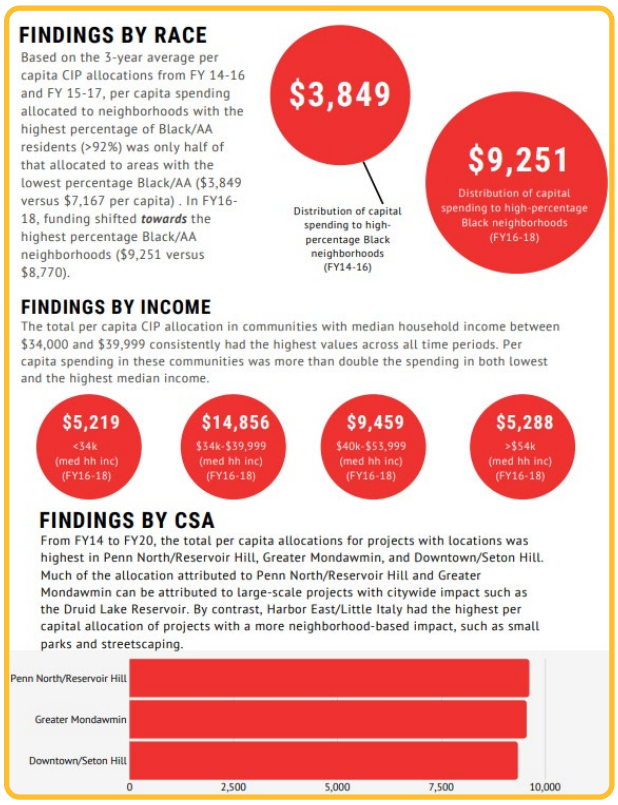
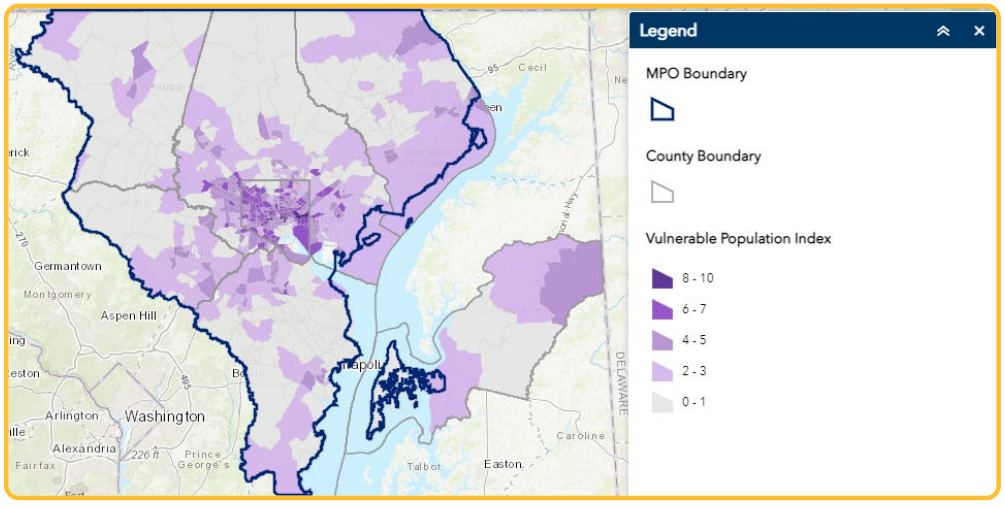


FIGURE 4: *BMC'S VPI MAP*



1.3.3. EXISTING PLANS

One method for prioritizing projects for CIP inclusion involves utilizing existing plans. Projects may be sourced directly from existing plans or prioritized in the list when they are part of a plan. Baltimore County refers to the Transit Development Plan and Annual Transit Plan for transit and uses its Pedestrian and Bicycle Advisory Committee (PBAC) to prioritize bike and pedestrian projects. The County's bike and pedestrian planner is the chair of the PBAC, which is made up of appointed representatives from different districts, two at-large members, and a secretary.

1.3.4. PROJECT RANKING AND EVALUATION

After projects are identified, jurisdictions use a range of strategies to prioritize investments. Jurisdictions use asset condition, and in some cases traffic levels, to determine how to prioritize maintenance projects. *Overall, there appears to be limited prioritization for projects across different departments or asset classes. Many of the prioritization strategies listed by interviewees (e.g., project scoring, asset management database, condition assessment) do not help prioritize across different asset classes.*

BMC Jurisdiction Example: In Anne Arundel County, a scoring system is laid out in the Transportation Functional Master Plan (TFMP), where performance measures are used to create a scoring system. The TFMP outlines criteria to assess projects by project type. For example, roadway and corridor projects are prioritized based on two factors: consistency with regional and state plans and requirements (35 percent of score) and achieving priority outcomes in five policy areas (65 percent of score). For assets like transit or bicycle infrastructure, a different scoring rubric is used to evaluate projects.

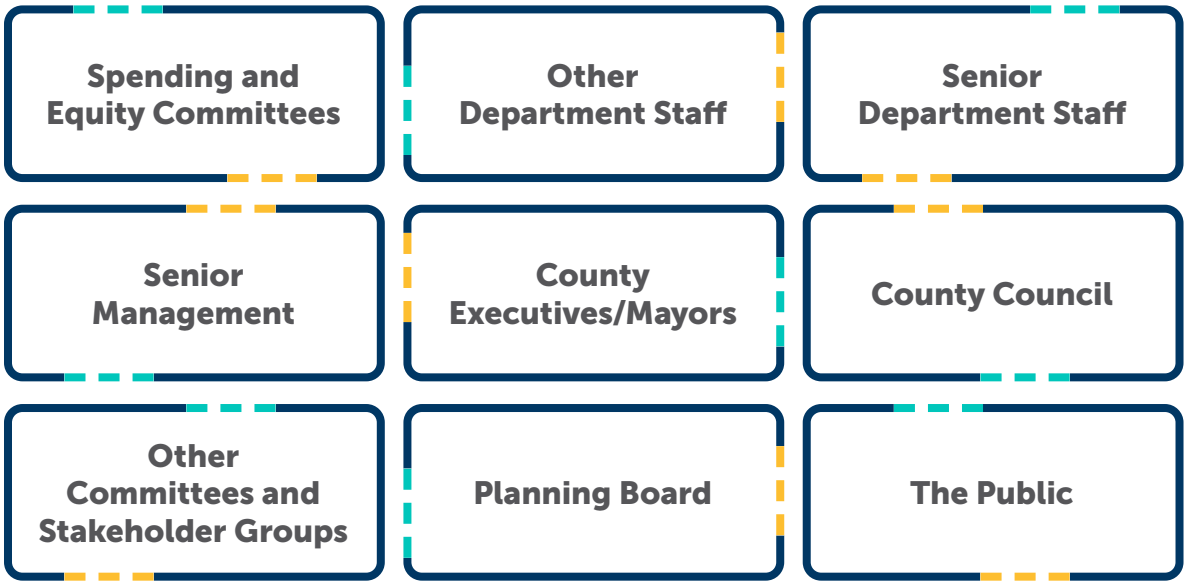
Other methods for prioritization include departmental input and commissioner review. In Harford County, each department prioritizes its own projects according to its internal process. In Howard and Carroll Counties, projects are vetted through the Administration/Commission before they are further evaluated for funding.

In many cases, departments do not initiate their capital planning process with a truly unconstrained list of needs, but instead scope out capital needs based on their understanding of available funds. Needs that cannot be funded in the current fiscal year are placed in the out-years of the CIP.

1.3.5. STAKEHOLDERS

Many different stakeholders are involved in the prioritization process and subsequent revisions to determine which projects are ultimately added to a CIP. An overview of involved parties is in **Figure 5**. Not all parties are involved in all processes across jurisdictions.

FIGURE 5: *STAKEHOLDERS IN THE PRIORITIZATION PROCESS*



In general, proposed projects for CIPs are evaluated by different levels of government and across departments. This may involve review from staff in other departments, as well as review by all senior staff across all departments, up to senior staff at the county level. County Executives/ Commissioners and County Council may express preferences for specific projects or initiatives and ultimately decide which projects make the final list. In addition, other committees and stakeholders may also weigh in (such as the Transportation Commission in Anne Arundel County or the Baltimore County PBAC).

Project suggestions may have already been provided by the public, but all jurisdictions provide budget documents online for public viewing and hold numerous engagement meetings to introduce the projects and solicit feedback. In the City of Annapolis, the CIP goes to the Planning Commission as well for public hearing.

1.3.6. IMPACT OF APPLICABLE LAWS, REGULATIONS, AND PLANS

Laws, regulations, and other plans and policies impact the development of the CIP. An overview of some of the guiding legal and policy documents is found in Figure 6.

Jurisdictions are required to follow certain laws and regulations, which impact sourcing, prioritizing, and/or funding proposed projects. These include applicable county codes, adequate public facilities ordinances, and/or road codes. Anne Arundel's county code stipulates that the capital program has to be consistent with the general development plan—e.g., consistent with this plan and subplans (such as water and sewer) as well. Its budget office also has developed a new form and policy guidance for climate resiliency. Carroll County mentioned conservation and open space laws that include requirements for stormwater management and environmental regulations. Counties that provide transit services also may need to follow Title VI requirements, and the *Manual on Uniform Traffic Control Devices* (MUTCD) governs traffic engineering.

Jurisdictions also rely on existing plans, such as 5-year Transit Development Plans (TDPs), during the process of developing the capital improvement program. Baltimore County's capital improvement plan utilizes its Annual Transit Plan (ATP) and the Consolidated Transportation Program (in an annual funding letter to the MDOT Secretary) to identify projects and ask for funding. Jurisdictions also mentioned bicycle and pedestrian plans as sources of projects and priorities. Howard County mentioned that their Complete Streets policy, Adequate Public Facilities Ordinance (APFO), and development review processes also may impact capital improvement planning.

FIGURE 6: *LAWS, REGULATIONS, AND PLANS*

1.4. FUNDING AND PROGRAMMING

1.4.1. TYPES OF FUNDING

A number of different funding sources are available to jurisdictions in the region to fund projects included in their CIPs. Funding sources fall into three broad categories:

- **Revenue Funds**, which refers to funds available through the jurisdiction's revenue collection. Revenue funds include general fund revenues from numerous sources such as property and sales taxes, MDOT Highway User Revenues, and utility funds. This source is sometimes called paygo/PAYGO, for "pay as you go."
- **Debt Funds**, which are generally bonds or loans borrowed against future revenue streams, such as general obligation (GO) bonds, which allow jurisdictions to borrow money for specific purposes and are approved by voters every 2 years and county transportation revenue bonds, which are issued by MDOT to be paid with future general fund Highway User Revenue.
- **Other Funds**, such as state and federal grants, private funds, and Local Impact Aid. Example funds include the federal Community Development Block Grant, federal transportation enhancement grants, local developer contribution fees, and the state open space program.

1.4.2. IDENTIFYING FUNDS

Identifying funds for projects is an iterative process. As noted above, jurisdictions generate a list of capital projects, which are then prioritized based on specified criteria. Once prioritized, funds can be programmed; different funding sources may have different requirements that help inform which projects are funded by which source. Eligibility for certain funding sources also can cause projects to "jump the queue" if they are lower priority but meet the requirements for a grant or other special funding source. Recommended programming is reviewed by jurisdictional leadership and often opened to public comment before being approved by the local legislature. In most jurisdictions, departments are responsible for acquiring external grant funding for capital projects, with revenue or debt funding in turn being allocated to match these grants.

Some jurisdictions use financial management software (e.g., Annapolis uses Munis) to help keep track of available funds, which can be helpful in identifying specific funds for each capital project prioritized in a jurisdiction's capital program. Carroll, Harford, and Anne Arundel Counties use either financial management systems or project management software that tracks where projects are in terms of budgets and funding availability.

1.4.3. UNFUNDED NEEDS

In most years, jurisdictions have more capital needs than there is funding available. Jurisdictions in the region do not have a standard methodology for addressing unmet funding needs; however, most jurisdictions keep track of unfunded needs in some way, either formally or informally. In the City of Baltimore, for example, departments are told their expected annual capital budget, but also are encouraged to submit all project requests to the Department of Planning so the City can get a good sense of unmet needs. The City keeps a record of unfunded projects and, in the CIP development process, reviews previously unfunded projects as part of the annual capital planning process.

BMC Jurisdiction Example: In Baltimore County, projects that go unfunded are added to a record for future reference and reprioritization in case additional grant funding becomes available. Capital budget requests in Anne Arundel and Carroll Counties are unconstrained, but during the prioritization process, the project lists are refined to only projects included with funding. Harford County informally maintains a list of unfunded capital needs, including a backlog of road/bridge maintenance projects.

1.4.4. FORECASTING FUTURE REVENUE SOURCES

Forecasting revenue sources is important for jurisdictions to have a clear picture for how much money will be available to fund capital projects for the full planning horizon of the CIP. Jurisdictions in the region use a variety of funding sources; however, all jurisdictions rely heavily on their finance/budget departments for revenue forecasts.

BMC Jurisdiction Example: As part of its budgeting process, the Howard County Budget Office develops 5-year general fund growth estimates. Similarly, in the City of Baltimore, every 5 years the Department of Finance develops a 10-year financial plan that sets debt levels, PAYGO, and grant funds. In Queen Anne's County, the Spending Affordability Committee prepares the budget projections used to determine PAYGO and bond revenue.

Beyond jurisdiction-level finance departments, some jurisdictions rely on the State for revenue forecasts for certain funding sources. In all counties, the State Transportation Improvement Program (STIP) is a key document for predicting what and when capital projects receive funds through MDOT.

1.4.5. THE INFLUENCE OF GRANTS AND MATCHING FUNDS

Grants and matching funds can be a valuable source of revenue for funding capital programs, and in some jurisdictions, grant-funded projects are often prioritized over other projects. In Baltimore County, for example, each department is responsible for their own grant applications, but the County also has a grants manager who helps all departments with grant applications, including preparing commitment letters for local matches and letters of support from members of Congress or other elected officials. The grants manager also has expertise with grants.gov, taking pressure off County staff members trying to navigate the system.

While a useful funding source, grants can also be a challenge. Anne Arundel County noted that using grants is not always beneficial. Many grants require projects to be fully funded, so there is not always incentive to pursue the grant, and, once a grant is obtained, grant requirements can lead to project delays. Similarly, Annapolis has struggled with projects that need a match (such as bicycle projects). The current administration has made matching a priority; however, the City does not have clear guidelines in place for managing match money.

2. REVIEW OF BEST PRACTICES IN CIP DEVELOPMENT

BMC jurisdictions have a wealth of examples on which to model their CIP development practices. Local jurisdictions, state governments, federal guidance, and existing research all provide direction on how to effectively formulate a CIP. This chapter provides an overview of the study team's research findings and is organized into the following sections:

1. Identifying Needs
2. Prioritizing Projects
3. Funding and Programming
4. Post-Implementation Monitoring

The literature review includes a wide variety of sources. Some of the key resources used included materials from the:

- American Planning Association (APA)
- American Association of State Highway and Transportation Officials (AASHTO)
- American Road and Transportation Builders Association (ARTBA)
- Association of Metropolitan Planning Organizations (AMPO)
- National Association of Counties (NACO)
- International City/County Management Association (ICMA)
- Government Finance Officers Association (GFOA)
- National Cooperative Highway Research Program (NCHRP)
- Transit Cooperative Research Program (TCRP)

In addition, keyword searches were conducted through the Transportation Research International Documentation (TRID) database and general web searches. Upon an initial literature scan, the study team documented relevant literature findings. These findings have been organized by theme in the sections that follow.

2.1. IDENTIFYING NEEDS

2.1.1. RULES AND REGULATIONS

Several sources highlight the role existing rules and regulations have in guiding the local CIP development process. These included city charters, county codes, state statutes, and federal regulations as well as existing and in-progress plans that guide long-term planning and development processes. Some examples of how city charters or county codes may impact CIPs include defining what can be considered as a capital improvement; documenting what levels of debt are acceptable; or stipulating other criteria such as requiring adequate levels of service for new capital investments and quantifying those levels. The CIP can be used to make improvements to meet state or federal requirements, such as accessible facilities for individuals with disabilities or reducing the teacher-pupil ratios at local schools. The CIP also may impact a jurisdiction's ability to receive state and federal grants or other funding if a project is shovel-ready and just needs to secure funds.

APA highlights the importance of aligning long-range plans (such as comprehensive plans, which have an outlook of 20 to 50 years) to the capital improvement budget while noting that these processes often occur independently from each other at the local level.[8]

Case Study: In Austin, the city charter requires that the CIP and land development code are consistent with the comprehensive plan.[9] A case study highlights how the Imagine Austin Comprehensive Plan (Austin 2012) incorporated comprehensive planning into the CIP process by creating a Capital Planning Office to integrate the two.[10]

Austin, TX, created a Capital Planning Office that worked to align the CIP with overarching planning goals and to manage the portfolio of capital projects.

GFOA recommends that master plans should "provide a vision for capital project plans and investments."[11]

The literature also recommends that jurisdictions establish a framework or policy for the CIP process. **Figure 7** synthesizes findings from local guidance published for communities in Massachusetts, Michigan, and Utah on developing such a framework.[12,13,14]

FIGURE 7: *COMPONENTS FOR ESTABLISHING A CIP PROCESS*

Adopt By Law and Establish Committee

- Draft and pass necessary legislation to establish guiding committee and enable the CIP process.

Establish Process Timelines

- Determine a realistic schedule for completing the CIP process from start to finish.

Document Criteria for Prioritization

- Establish a transparent list that clearly outlines how capital projects will be prioritized.

Identify Roles

- Determine which actors/committees will be involved the process and their roles.

Inventory Existing Assets

- Develop a complete list of all properties, assets, and vehicles.
- May also include roadways and other infrastructure such as sewers.
- Document basic information about the condition of each asset such as year of construction and condition.

2.1.2. METHODS FOR IDENTIFYING NEEDS

Local governments in the Baltimore region used a mix of top-down and bottom-up approaches to identify needs for inclusion in the CIP—a mix of these approaches also was found in the literature. GFOA recommends considering all capital needs as a whole by incorporating the jurisdiction's fiscal capacity, developing a plan for debt issuance, and the impact on operating budgets and reserves.[15] A beginner's guide to the capital improvement process for local leaders in Utah suggests identifying projects "from resident requests, political campaign promises, responses to service deficits, crises and emergencies, regulatory requirements, current asset assessment, and current master plans."[16]

Other methods for identification are department-driven. A guide by the Michigan Economic Development Corporation suggests that department heads complete project application forms that are then ranked by multiple committees,[17] as does another guide for communities in Massachusetts.[18] Project request forms or project charters can be used to prioritize potential projects, develop an inventory of capital needs, and encourage reflection on whether a jurisdiction has the capacity to deliver the project. Requiring the completion of one of these documents asks proposers to think carefully about all aspects of the project, since the forms generally request information about the project scope, justification for the need, operating and capital costs, timelines and milestones, and project management structure.[19,20]

2.1.3. EQUITY CONSIDERATIONS

Jurisdictions are advancing equity in the capital improvement process through participatory budgeting and other community-driven planning efforts. The City of Philadelphia launched its participatory budgeting initiative in 2020 with the aim of involving the public directly in spending decisions and incorporating racial equity into the decision-making process. As part of the process, Philadelphians will develop ideas on how to spend $1 million in capital projects.[21] While $1 million is a very small portion of the larger budget, the City also will conduct increased public engagement in Black and Brown communities for the general CIP. Denver will follow a similar approach in which community-led committees will develop project proposals for $1.7 million in funding.[22]

Cities in particular are taking the lead on building equity frameworks, policies, and tools for equity in budgeting.[23] Cities are also developing frameworks for measuring and conducting analyses on the equity impacts of CIPs, including use of program-based budgeting instead of line-item budgeting.

Case Study: Madison, WI, developed a Racial Equity and Social Justice Initiative (RESJI) tool that is used to understand how communities of color and low-income communities may be impacted by proposed changes in policies.[24] Projects such as planning for a new fire station, an analysis of neighborhood trash pickup, and hiring in the City's IT department have all been analyzed using this tool.[25]

Case Study: In San Antonio, TX, the City's Office of Equity aims to "advance equity in budgeting, community engagement, and high-priority service delivery."[26] San Antonio developed a Budget for Equity Tool (BET) to evaluate whether budgets "advance equitable outcomes for residents" using a program-based budgeting approach.[27]

Case Study: Denver recently converted its line-item budget to a program-based budget (budget drawn up for individual programs instead of specific expenses) to understand the true cost of providing services. The City added additional data points to this new budget to understand who was being served by these programs and the equity impact of each program.[28]

Aside from the current state of practice, research conducted on infrastructure inequalities may shed some light into understanding the equity impacts of the built environment. Inequalities in infrastructure can be indicative of larger environmental justice (EJ)[29] concerns and social inequalities.[30] APA suggests conducting an analysis to determine the social vulnerability of a population by evaluating factors such as socioeconomic status; household composition; age; disability; race/ethnicity/language; housing; and transportation.[31] Another methodology first identifies EJ neighborhoods at the Census tract level, maps them in GIS, then spatially allocates the capital budget to Census tracts based on the perceived benefits of projects. This process develops an overall funding ratio between EJ and non-EJ neighborhoods, which can be used to analyze CIP fund allocation. In a similar process, Howard County uses BMC's VPI to track the number of roadway projects occurring in priority communities.

Case Study: Jurisdictions can identify equity populations at the Census tract level, then map and analyze CIP investments.

Federal or state regulations also may impact equity considerations. For example, some federal requirements apply to all levels of government that receive federal funds, such as the Americans with Disabilities Act (ADA) that prevents discrimination based on disability. Jurisdictions may consider how they can include accessible facilities or retrofits into their capital improvement plan. Title VI of the 1964 Civil Rights Act, which prevents discrimination based on race, color, and national origin, is another key federal law whose requirements funding recipients must uphold.

Another equity consideration is intergenerational and focuses on whether those paying for an improvement also will benefit from it and vice versa.[32] This should be considered as jurisdictions determine how capital projects should be financed (e.g., debt versus general fund revenue). A report from the National Association of State Budget Officers (NASBO) recommends financing large projects using long-term debt, as these projects also have long lives from which those paying for them also can benefit.[33] In addition, NASBO recommends that funding structures using bonds or other debts should not exceed the life of the asset.

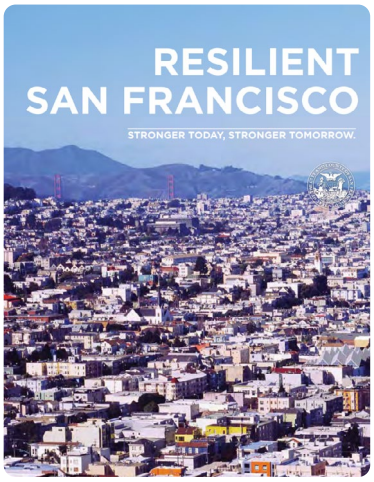
2.1.4. RESILIENCY

Resiliency, like equity, is difficult to quantify. In this instance, "resiliency" refers to how jurisdictions can evaluate the long-term sustainability of their physical infrastructure considering a changing climate and other natural and man-made hazards and mitigate those risks. Part of incorporating resiliency into capital planning requires jurisdictions to account for the lifespan of capital improvements together with their long-term costs and the hazards and risks associated with the physical environment in which these improvements are built.

Resiliency concerns are increasingly being treated as integral to capital planning.

Case Study: In San Francisco, the City's Office of Resilience and Capital Planning is responsible for developing the budget.[34]

The CIP provides an opportunity to bolster community resilience to natural and man-made hazards.



In its report on planning resilient infrastructure, APA highlights the role that CIPs can play in community resilience, especially since they guide near- and long-term infrastructure needs.[35] Accordingly, the report recommends using the CIP to build resilience for future floods and other hazards and emphasizes the importance of connecting the CIP to regional, comprehensive, or other plans by linking the goals and objectives of existing plans to the CIP. Similarly, Planning for Hazard's CIP guidance highlights the benefits of integrating hazard mitigation into CIPs. According to the Colorado Department of Local Affairs-led group, incorporating hazard mitigation projects into CIPs helps leverage funding to implement hazard mitigation; ensures that public expenditures for capital improvements are consistent with hazard mitigation goals, objectives, and policies; provides an opportunity to review and consider the impact of proposed improvements on hazard vulnerability; and helps guide new growth to safer areas.[36] While these actions help reduce a jurisdiction's risk, prioritizing mitigation investments may come at the expense of allocating spending to more immediate needs (such as maintenance backlogs).

2.1.5. UNCONSTRAINED CAPITAL PLANNING

Based on the information provided in the interviews, most jurisdictions within the BMC region maintain a list of all projects submitted each year, but do not have a formal method for tracking unfunded projects. Maintaining a list of unfunded projects is valuable for multiple reasons—it provides a starting point for developing future-year CIPs and helps set a funding goal and communicate a community's capital backlog.

The literature does not provide a great deal of guidance on how to track unfunded projects; however, examples from practice can be useful.

Case Study: The San Francisco Municipal Transportation Agency (SFMTA) develops an unconstrained 20-Year Capital Plan, which serves as an assessment of SFMTA's expected capital needs during the coming 20 years. This document is used as a guide for developing SFMTA's fiscally constrained CIP annually and allows the agency to keep track of projects that may not have been funded in the CIP.[37]

Another approach is to publish both a fiscally constrained and fiscally unconstrained CIP each year. To track unfunded projects, NJ Transit, for example, publishes an unconstrained financial summary as part of its CIP. For NJ Transit, this unconstrained summary is used to help prioritize capital projects in future constrained plans and is seen as an aspirational document.[38]

2.1.6. ASSET MANAGEMENT

BMC jurisdictions explained the challenge of balancing expansion with asset preservation. Jurisdictions may need to expand their physical infrastructure—but capital asset expansion will lead to new maintenance needs to be incorporated into a larger maintenance backlog. Capital plans should capture anticipated future maintenance needs and operation costs associated with new investments.[39]

Jurisdictions manage a range of physical infrastructure, which complicates prioritization of State of Good Repair needs across asset classes. In general, use of condition or performance of assets is a common foundation for prioritizing reinvestment needs—along with an understanding of the asset's criticality to the system.

Aside from manual tracking using spreadsheets, enterprise asset management (EAM) software—such as Maximo or Infor—is available to help jurisdictions track and manage their assets and support the entire capital planning process in one, central solution. Jurisdictions can use EAM software to create an inventory of and track all assets and asset conditions, including maintenance and improvements made to existing assets. The software also can be used to forecast future capital needs and expenditures based on age or asset condition.[40] The data exported from these systems can be used to guide capital planning by providing a picture of the labor hours and the cost of maintaining the assets.

Case Study: The City of Seattle defines asset management as, "getting the best results of performance for the preservation, improvement, and operation of infrastructure assets given the resources available."[41] Seattle's financial planning accounts for full lifecycle costing and its CIP projects are based on critical asset needs, condition, and levels of service.[42]

2.2. PRIORITIZING PROJECTS

Jurisdictions often make tough decisions regarding what capital needs get funded and which ones do not. Having a prioritization mechanism helps communities make equitable, defensible, and objective funding decisions. Broadly speaking, evaluation and prioritization criteria should be reflective of community needs and be general enough that they can remain in place despite changing political climates. A systematic approach to prioritization that is guided by specific criteria can protect decision-makers from accusations of favoritism and help ensure decisions are based on measurable criteria rather than personal preference.

To ensure fairness, project prioritization criteria should be developed with input from a variety of viewpoints and perspectives.[43] In addition to using existing policy priorities to help guide CIP evaluation and prioritization efforts, GFOA recommends aligning capital investment decisions with long-range master pans, comprehensive plans, strategic plans, and organization goals and objectives.[44]

Key Takeaway: Evaluation and prioritization criteria can be linked to performance measures and the priorities included in long-range plans.

The literature suggests that prioritization criteria can link capital projects with program objectives or to performance measures, and weighting can be used to emphasize some criteria over others.[45] It also can be beneficial for jurisdictions to use quantifiable metrics, which can be tied to performance measures, to drive prioritization in the CIP process. For example, a jurisdiction may prioritize based on a metric such as the number of users that benefit from a capital investment or the economic impact of a capital investment.

Case Study: For example, Seattle DOT prioritizes pavement preservation and restoration work by conducting a benefit-cost analysis on street segments that need repair. For this analysis, Seattle DOT estimates the cost of deteriorated pavement conditions to road users and the cost of the treatment to repair the road. The DOT then compares the two values to understand the cost and benefit of repairing a road segment.[46]

2.2.1. INCORPORATING EQUITY INTO PRIORITIZATION

Factors such as equity can be incorporated into prioritization measures. There are six general methods used to incorporate equity into the development of transportation improvement programs (TIPs) at the regional level.[47]

- **Location burdens-based**, which considers the location of a project within equity communities as detrimental for them. Projects are awarded points if it is not located within an equity community or if measures to mitigate harm are included.
- **Location benefits-based**, which considers the proximity of a project to equity communities as beneficial. Projects are awarded points if they are located within or adjacent to an equity community.
- **Impacts-based**, which evaluates both the potential benefits and burdens a project will have on equity communities. Projects are awarded more points if it will bring about benefits and fewer points if it will bring about burdens.
- **Access to destinations-based**, which considers accessibility improvements that a project may provide an equity community. Projects are awarded more points if it can increase access to key destinations.
- **User-based**, which considers who will use a project. A project is a awarded more points if more people from equity communities use the facility.
- **Community engagement-based**, which considers how project sponsors involved equity communities before and during a project's development. Projects with more stakeholder engagement are awarded more points.

While this research refers specifically to MPOs, the findings also can inform the application of equity in jurisdiction-level capital planning.

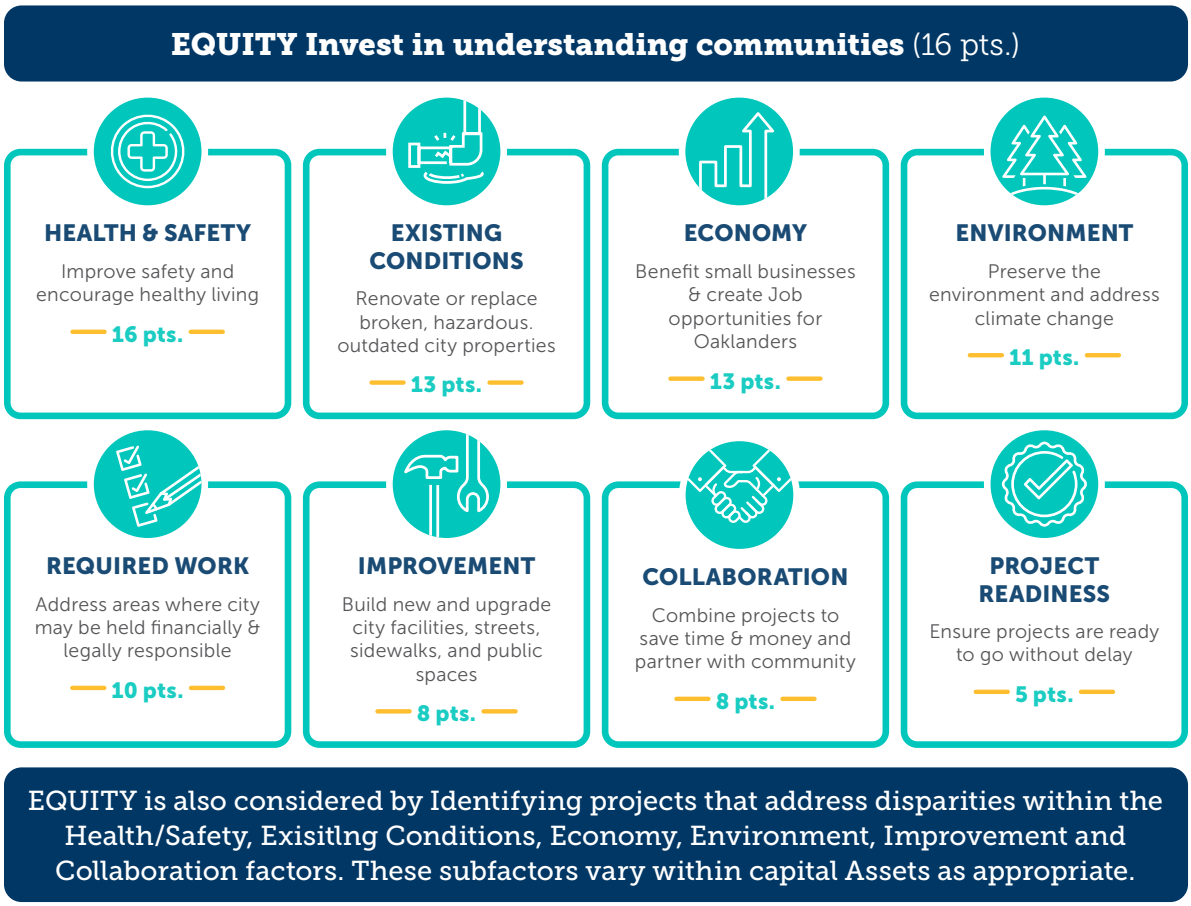
Most of the methodologies require only geographic and demographic data and are flexible enough that a jurisdiction can make the evaluation more or less intensive based on its own priorities and/or capacity.[48] Within the BMC region, for example, Howard County uses a location benefits-based approach to help prioritize complete streets projects in equity communities, as defined by BMC's VPI.[49]

Community engagement-based criteria is unique from the other approaches in that it focuses on how projects are developed rather than the impacts of the projects themselves. Prioritizing projects based on community engagement helps ensure that projects that may have an impact on a community are shaped by that community. Further, by tying potential funding to community engagement, MPOs help hold project sponsors accountable and encourage them to actively engage with communities in a meaningful way. The Mid-America Regional Council, for example, scores projects based on their level of engagement, with more points awarded to projects with clear and specific strategies for engaging with communities of concern during project implementation.

Several examples of best practice also can be drawn from other jurisdictions across the country.

Case Study: For example, in 2018, the City of Oakland overhauled its CIP prioritization process to help ensure community values are reflected in its 2-year CIP. The new citywide prioritization factors and weighting center on equity, as shown in **Figure 8**.[50] Not only are projects scored specifically on if it is located in an underserved community, but equity is a consideration in other prioritization measures as well. In addition to using equity-centered prioritization criteria, Oakland's Department of Race and Equity is consulted regularly throughout the CIP development process.[51]

FIGURE 8: *CITYWIDE PRIORITIZATION FACTORS AND WEIGHTING SYSTEM FOR OAKLAND, CA*



Similar to Oakland, the Boston Region MPO recently updated its TIP criteria to center on equity more explicitly. Under the new scoring criteria, projects receive progressively more points based on the share of equity populations in the project area and the expected impacts of the project. An equity multiplier is applied to each project to help ensure that projects are spread fairly across all areas of the region.[52]

2.2.2. PRIORITIZING ACROSS DEPARTMENTS AND ASSET TYPES

Prioritizing projects across departments and asset classes can be difficult. This challenge is highlighted in the results of a survey of state transportation agencies regarding prioritization of capital projects; nearly two-thirds of survey respondents felt their current project evaluation procedures do not address or poorly address funding in a mode-neutral manner.[53]

There are a variety of ways to navigate the issue of prioritizing across departments, but the literature does not provide a clear best practice. For example, the Utah Department of Workforce Services notes in its guidance on CIP development that, with a standardized prioritization methodology, jurisdictions can first score and prioritize projects by department before ranking them against each other, or jurisdictions can rank all projects against each other from the start. Jurisdiction size and capacity may play a role in determining the best approach.[54]

Case Study: In the City of Lawrence, KS, projects are scored based on a number of broad categories, as shown in **Figure 9**.[55] By creating evaluation criteria based on broad categories, the City is able to apply the same criteria to a variety of project types.

FIGURE 9: *PRIORITIZATION CRITERIA, LAWRENCE, KS*

Categories	Category Score	Category Weight*	Weighted Score	Total Score
Long-Term Planning (0-5)		2	0	
Health/Public Safety (0-5)		3	0	
Infrastructure (0-5)		2	0	
Regulatory Compliance (0-5)		4	0	
External Funding (0-5)		1	0	
Impact on Operational Budget (0-5)		2	0	0
Quality of Life (0-5)		2	0	
Location/Timing (0-5)		2	0	
Equity (0-5)		1	0	
Sustainability (0-5)		1	0	

*Weighting will be re-evaluated by the City Commission

State DOTs also are a good model for how assets can be prioritized across different classes of infrastructure. The criteria in these methodologies center on DOT priorities and performance measures that will be impacted by a variety of capital projects.[56]

Case Study: Oregon DOT evaluates projects for its Enhance Program based on three modal criteria: (1) connectivity and system benefits, (2) safety and public heath, and (3) accessibility and mobility as well as six cross-modal criteria: (1) economic development, (2) social benefits, (3) environmental stewardship, (4) safety, (5) project readiness, and (6) leverage [of funding and project coordination opportunities].[57]

Case Study: Virginia DOT uses a mode-neutral prioritization process called SMART SCALE, which evaluates capital projects in six categories: safety, congestion mitigation, accessibility, environmental quality, economic development, and land use.[58]

2.2.3. ADDRESSING STATE OF GOOD REPAIR (SGR)

Key Takeaway: Quantifying the cost of deferring maintenance can provide the data needed to make informed decisions about SGR needs.

Projects that address a jurisdiction's SGR needs tend to comprise a large portion of a CIP. Jurisdictions often have a backlog of maintenance needs caused by a lack of funds for maintenance costs, jurisdictional priorities that result in restricted maintenance activities, a focus on short-term planning that overlooks maintenance needs, and/or a limited ability to quantify consequences of deferred maintenance.[59] However, a large backlog of SGR needs can become costly, and it is important to have a good process for determining when assets should be renewed first.[60] Beyond just escalating costs, SGR backlogs can lead to service disruptions and safety issues.

Jurisdictions can measure the severity of an SGR need to help prioritize among a large backlog of capital projects. A useful tool for prioritizing SGR investments is to explore the business risk exposure (BRE) for not undertaking a particular project. Specifically, risk assessment measures the likelihood that an asset will fail and the consequence of such a failure.[61] This measurement allows a jurisdiction to quantify the risk to services of deferred maintenance and can help agencies prioritize SGR investments on assets whose failure would be critical.

State DOTs and transit agencies also can provide some guidance on strategies for assessing deferred maintenance costs. NCHRP Report 859 presents a framework for quantifying the consequences of deferred maintenance due to a lack of funds to perform all needed maintenance. Under the framework, deferred maintenance is quantified by comparing changes in an asset condition and other performance measures under different maintenance scenarios. While performance measures may vary, key measures include deterioration of an asset's condition over time, decreases in an asset's remaining life, increases in future costs to cover the desired level of service, increases in maintenance backlog costs over time, and decreases in the asset group's value over time.

2.2.4. FINDING A BALANCE BETWEEN SGR AND NEW CAPITAL

Jurisdictions often face the conundrum of whether to fund SGR projects over new assets or infrastructure. Simply replacing assets in-kind may result in jurisdictions failing to invest in the future as technology and infrastructure needs change over time. Conversely, focusing investments on new infrastructure can result in a growing maintenance backlog and degrading infrastructure quality.

A common way to balance infrastructure maintenance versus expansion is through score-based project prioritization. A prioritization scheme that accounts for SGR needs among a variety of factors can be used to evaluate both maintenance and expansion projects side by side. For example, in the City of San Diego's CIP prioritization process, asset condition accounts for 20 percent of the prioritization score.[62] While projects that maintain an existing asset have an advantage in scoring, other factors such as economic prosperity, risk to health, and sustainability are considered in the evaluation as well.

Business risk exposure-based assessments could also be tweaked to find a balance between new and old investments. Failure to invest in new assets like better transportation infrastructure or climate resiliency carry their own business risk, which could be compared to the cost of failing to make SGR investments.

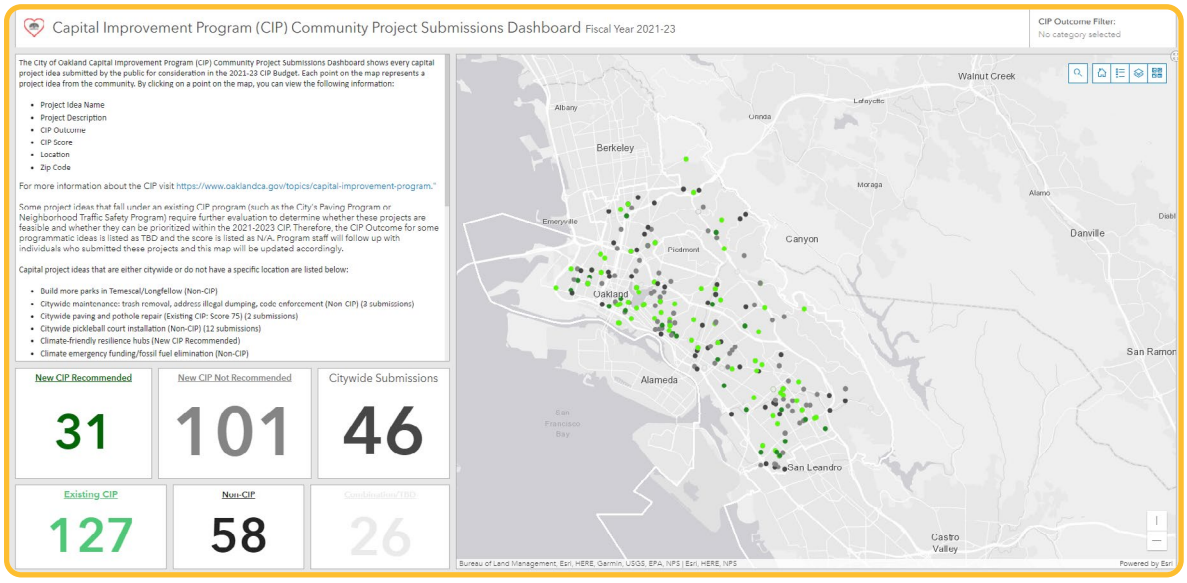
2.2.5. STAKEHOLDER ENGAGEMENT

Stakeholder engagement is an important piece of developing a capital budget. Jurisdictions across the country use a variety of innovative engagement approaches. In general, jurisdictions attempt to engage the public throughout the CIP development process via community meetings, surveys, and other outreach strategies at varying degrees of intensity.

Case Study: In San Diego, the CIP development process begins each year with the City's Community Planners Committee and Community Planning Groups, who gather community-recommended CIP projects that are submitted to the Mayor, City Council, and a CIP Review and Advisory Committee.[63] The City also solicits public feedback on the draft CIP during public budget hearings with local leaders.[64]

Case Study: The City of Oakland begins engaging the public at the start of its CIP development process. Every 2 years, the City looks to the community to help identify and prioritize capital projects. At the start of each CIP cycle, the city opens a public portal for residents to submit projects for inclusion in the CIP (Figure 10).[65] Engagement is specifically targeted at communities in the city that were underrepresented in previous CIP outreach. In addition to soliciting project ideas, in the early phases of CIP development, the City holds community meetings and distributes paper surveys to gain an understanding of community priorities. The results of this outreach informs how the City weights the prioritization criteria.[66]

FIGURE 10: *CIP COMMUNITY PROJECT SUBMISSION DASHBOARD, OAKLAND, CA*



Participatory budgeting also provides an opportunity to engage communities about prioritization during the CIP process. Numerous cities across the country have undertaken participatory budgeting efforts to better engage with constituents and give them more of a voice in the prioritization process.

Case Study: Seattle, for example, runs the Your Voice, Your Choice participatory budgeting program for parks and streets. The public can propose potential capital project ideas that are then prioritized and voted on by community members.[67] Other major cities with participatory budgeting programs include Oakland, Philadelphia, New York, and Chicago.

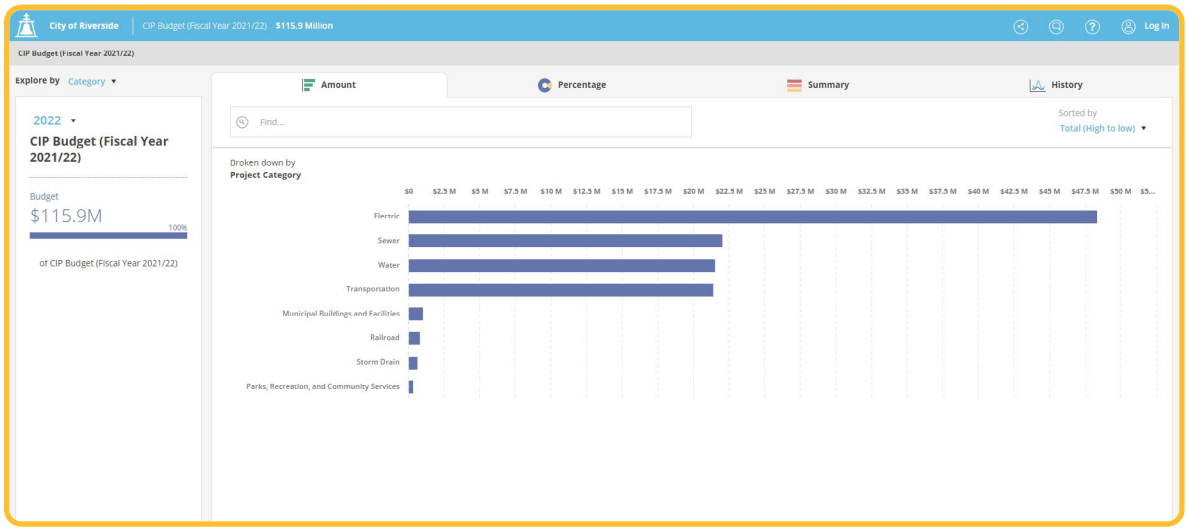
It is important to engage the public during the development of CIPs, but it is equally important to keep the public informed once the CIP is finalized. Capital budgets can be complicated technical documents, and presenting them clearly is beneficial for building accountability and trust. GFOA suggests that any capital budget presentation should include the following:

- Overview of capital planning policies, which present background on how a jurisdiction approaches capital planning.
- Connection to other plans, highlighting how the CIP relates to other planning efforts in the jurisdiction, including long range and master plans.
- Multiyear capital plan, identifying a list of prioritized projects over a designated time horizon.
- Information on asset management and upcoming SGR needs.
- Overview of monitoring and reporting practices to keep internal and external stakeholders informed and to ensure capital projects stay on budget and schedule.
- Highlights and summary
- Individual project details
- Operating impacts

Jurisdictions across the country are sharing capital budget data with the public and using online interfaces to develop user-friendly visualizations.[68] Data visualization tools are a helpful way of translating complicated financial data into interactive charts, graphs, and maps that are easy for the public and other stakeholders to absorb.

Case Study: For example, Riverside, CA, has an online, publicly accessible budget portal where all capital projects are entered, as shown in **Figure 11**. This portal helps Riverside be more transparent about city finances and provides citizens with direct access to both the overall city budget, but also how capital projects are funded.[69]

FIGURE 11: *SCREENSHOT FROM RIVERSIDE'S BUDGET PORTAL*[70]



2.3. FUNDING AND PROGRAMMING

Evaluation and prioritization of projects is an important step in formalizing the budget priorities for a jurisdiction; however, it is ultimately the availability of funds that dictates which capital projects are programed in the CIP. Funding can come from a variety of sources, but it can be challenging to match funds fairly and transparently to projects. Jurisdictions have at their disposal a variety of funding options, each of which come with their own benefits and drawbacks. Funding can come from federal, state, and local sources, but eligibility requirements and the availability of funds can vary significantly based on location and asset type.

2.3.1. FUNDING SOURCES

Two major forms are GO bonds and PAYGO funds. GO bonds are a form of debt financing and one of the most common funding options used in CIPs. These bonds require voter approval and are backed by the "full faith and credit of the issuing municipality."[71] GO bonds are largely used for projects that are otherwise not funded by city revenue and will serve the community in some way.[72] This includes infrastructure projects, like roads, bridges, water and sewer facilities, levees, schools, public universities, and other public works projects.[73]

PAYGO funds are generated from a jurisdiction's general fund and are intended to help jurisdictions offset long-term bond borrowing for capital projects.[74] PAYGO funds are made up of various payments to a jurisdiction, such as property taxes. PAYGO funds can be used for capital projects; however, for most jurisdictions in the region, PAYGO is only a minor capital funding source.

In general, the literature does not provide extensive guidance on when PAYGO should be used versus GO bonds and other debt financing. A report from NASBO notes that debt financing is more appropriate than PAYGO for long-term infrastructure projects, as some of the costs of the debt financing will be passed to future users who will benefit from the infrastructure investment. However, bond terms should not exceed the useful life of the asset it is financing.[75]

Case Study: Arlington County, VA, considers PAYGO funds the most flexible funding source at the County's disposal and is typically used for assets with a useful life of 10 years or less.[76]

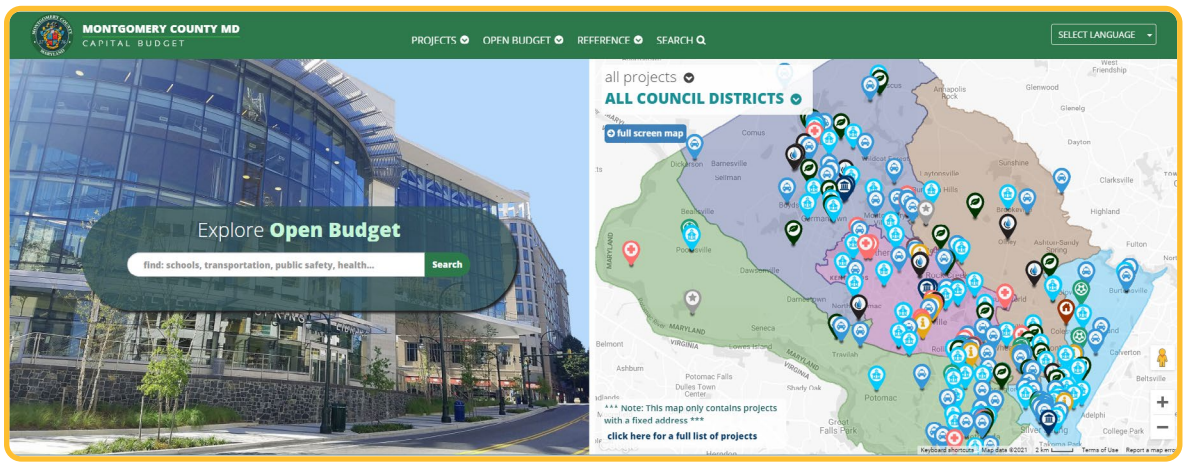
2.3.2. TRANSPARENCY IN FUNDING

Transparency in decision-making is of the utmost importance when developing a CIP. Showing stakeholders and the public how and why funding decisions are made builds trust and public confidence in the governing body. The best capital budgets enhance transparency and accountability to citizens, giving citizens broader context to understand all the major components of the budget.[77] Transparency should go beyond publishing a budget on a City website and should be a part of the CIP development process.

In addition to participatory budgeting processes, jurisdictions are using online portals to help maintain an open budget and present often complicated budgetary information in a way that is accessible to the public.

Case Study: Montgomery County, MD, for example, maintains an open budget interactive website, which breaks down both the capital and operating budgets.[78] The open budget website (**Figure 12**) provides detailed information about the projects included in the CIP, where they are located within the county, and how they are funded.

FIGURE 12: *MONTGOMERY COUNTY'S OPEN BUDGET WEBSITE*



2.3.3. UNEXPECTED FUNDING NEEDS

A challenge in developing CIPs is having funds available for unexpected needs. The literature provided limited guidance on this issue; however, examples from peers provide some insights. One method is to create a set-aside fund for smaller projects that may not meet a dollar-value minimum to qualify on their own for inclusion in the CIP.

Case Study: In Newport News, VA, for example, the City uses a cash capital fund made up of cash appropriated within the operating budget. This cash capital fund is largely used to purchase equipment, which would otherwise require GO bond funding. While this funding is focused on covering equipment purchases, it also could be used in emergency situations.[79]

Another method is to adjust local debt ratios. In adjusting debt ratios, jurisdictions are given added flexibility to meet future and/or unexpected capital needs. Spending Affordability Advisory Committees, which currently operate in Anne Arundel, Howard, and Queen Anne's Counties, could conduct similar analyses, to help ensure that jurisdictions have adequate funds to cover unexpected capital needs.

Case Study: For example, in developing its FY 2018 – FY 2027 CIP, Alexandria, VA's city council approved changes to the City's Adopted Debt Ratios as suggested by the city's Budget and Fiscal Affairs Advisory Committee. Specifically staff recommended changes to the Debt as a Percentage of Real Property Value and Debt Service as a Percentage of General Government Expenditures policies after comparing the city's current policy and forecasted capital needs to adopted policies and practices of peer jurisdictions.[80]

2.3.4. MATCHING FUNDS

A number of funding mechanisms are available to jurisdictions for raising funds for projects, however, the literature does not indicate a best practice for raising a matching fund prior to a grant award. One option is to use money from a general fund or tax revenues. Allocating cash funds can be a safer bet than using debt financing. With cash funding, if a grant does not come through, a jurisdiction has at least not gone into debt to finance it; however, using the general fund can diminish the amount of money available in the operating budget.

Some cities also have grant offices within their finance offices that support departments in finding, procuring, and managing grants. A dedicated grant office helps ensure that funding from grants are spent wisely and projects are delivered on time. These departments also can be a good resource for obtaining matching funds.

Case Study: In Detroit, MI, the Office of Development and Grants has played a major role in securing investment in the city following its bankruptcy. The Office of Development and Grants serves as a liaison between the City and funders, including foundations, corporate leaders, and other government agencies, to build partnerships that will support the City's programmatic priorities.[81]

One method for jurisdictions to raise funds for capital projects is through value capture. In general terms, value capture quantifies (in dollars) the expected return on capital investments and the cost to improve and sustain investments. A number of mechanisms for value capture exist, as shown in **Figure 13**.

FIGURE 13: *TYPES OF VALUE CAPTURE*

Impact Fees

- A one-time charge collected by local governments from developers to finance new infrastructure and services associated with new development.

Special Assessment Districts

- An additional fee assessed on properties projecting a benefit owning to the geographic proximity of a new capital investment. Special assessment districts can only be applied with voter approval.

Negotiated Extraction

- A one-time charge similar to an impact fee, but negotiated extractions are not part of a formal process. Rather, they take the form of in-kind contributions to local road networks, parks, or other public goods as a condition of development approval.

Air Rights

- A type of joint development where development rights above or below a designated piece of infrastructure are used to generate and capture incremental increases in land value.

Joint Development/Public-Private Partnerships

- A development project where a private-sector partner provides the facility or makes a financial contribution to offset construction costs.

Land Value Tax

- A tax levied on the value of land benefiting from public infrastructure.

Tax Increment Financing

- A mechanism that allocates any increase in the total property tax revenues towards a public investment within a designated area.

Transportation Utility Fees

- Utility fees assessed on characteristics assumed to be more closely related to transportation demand than property taxes.

Value capture can be complicated to implement and requires a high level of collaboration between a range of stakeholders. In addition, the ability to use value capture is predicated upon enabling legislation by states, and some mechanisms may not be feasible in Maryland currently. However, value capture does have benefits—it can accelerate project delivery, provide local fund-matching opportunities, and offer seed money to get projects off the ground.[82] For example, Eugene, OR, used development impact fees to cover a local match for new bike infrastructure.[83]

Beyond value capture, other models exist to provide alternative funds to jurisdictions. One such model is a green revolving fund (GRF). GRFs are defined as "an internal investment vehicle dedicated to financing energy efficiency, renewable energy, and other sustainability projects that generate cost savings."[84] To date, these funds have largely been used in university settings; however, there are some examples of GRFs at the municipal level and at airports. Santa Barbara, CA, for example, created a GRF in 2016 that will help fund energy-efficiency projects.[85] These funds also can help demonstrate the business case for sustainability projects and help create a programmatic approach to funding projects focused on sustainability.[86]

2.3.5. FUNDING BICYCLE AND PEDESTRIAN PROJECTS

Key Takeaway: Bike and pedestrian projects can be incentivized through prioritization criteria or lumped in with existing roadway projects.

Determining the right funding source for projects can be a challenge and, often in the CIP programming process, larger infrastructure projects overshadow less-expensive bicycle and pedestrian projects. The Alliance for Biking and Walking in partnership with the League of American Bicyclists provides some guidance on how to both integrate bicycle and pedestrian projects into larger infrastructure efforts and/or find innovative ways of funding these projects.

The Federal Highway Administration (FHWA) advocates for implementing a project scoring process that includes criteria specific to bicycle and pedestrian projects or that weighs infrastructure projects that include multimodal elements differently than those that do not.[87] In Memphis, TN, the criteria for awarding funding through the region's Surface Transportation Program explicitly awards points for infrastructure projects that include a shared-use path or cycle track.[88] Similarly, MDOT's project scoring system is required by law to include criteria related to a project's ability to increase the use of walking, biking, and transit.[89] Adding a multimodal component to the evaluation process for roadway projects incentivizes the inclusion of multimodal projects in other infrastructure projects and increases the odds of multimodal projects receiving funding.

Another option is to bundle bicycle and pedestrian projects with ongoing SGR and maintenance projects on roadways. Bundling projects leads to operational efficiency and helps ensure that road users are disrupted once rather than multiple times due to construction. The City of Memphis, for example, used Highway Safety Improvement money to install a protected bike lane in conjunction with an already-planned roadway resurfacing project.[90]

2.4. POST-IMPLEMENTATION MONITORING

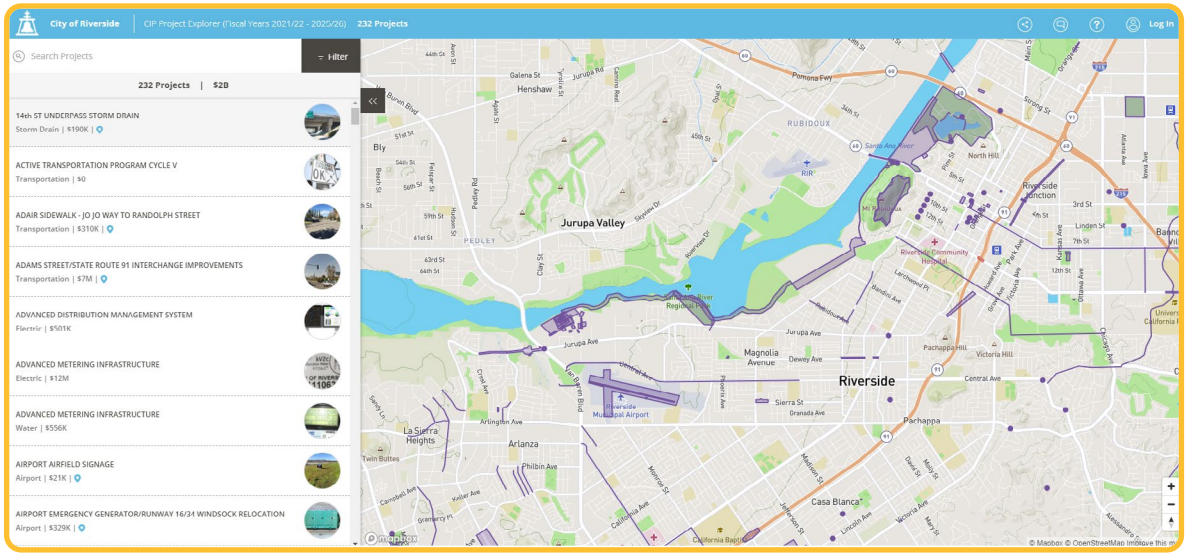
Monitoring activities for post-CIP implementation can include tracking spend-downs and project progress and evaluating capital spending from an equity perspective as well as ways to communicate these metrics across departments, with elected officials, and with the public.

Jurisdictions should first understand relevant legal and fiduciary regulations that apply to tracking and monitoring. Multiple software systems may be required to help jurisdictions fulfill these requirements. Jurisdictions should consider how these technology programs will interact and how they export data to integrate the systems to the extent possible and minimize the need for manual data editing. GFOA recommends that communications regarding project status and spend-down are written clearly, using plain language that can be easily understood by all stakeholders, and are conducted on a regular basis. Reports should compare original project plans with actual project status and highlight any major disparities between the two.[91]

With the rise of open data and open budget initiatives, jurisdictions across the country are finding ways to combine data, technology, and mapping to conduct post-implementation monitoring.

Case Study: Riverside, CA, integrated budget data into an online, publicly accessible map shown in **Figure 14**.[92] This map features all 161 projects in the FY 2018–2023 CIP and links budget data to show spend-down and other project information with just one click.

FIGURE 14: *RIVERSIDE, CALIFORNIA'S CIP PROJECT EXPLORER*



3. RECOMMENDATIONS TO ENHANCE LOCAL CIP PROCESS

This section includes a set of proposed recommendations on how to improve CIP development in the Baltimore region, based on challenges identified in the interview process and best practices from the literature review. An overview of recommendations is shown in **Figure 15**. These recommendations are not one size fits all; rather, the applicability and ultimate implementation will depend on the individual needs of each jurisdiction, and they were developed with the understanding that needs (in particular, maintenance needs) are far greater than the available funds. Specific actions, potential barriers, and metrics to measure outcomes are provided for each recommendation.

Each recommendation is associated with at least two of the four themes identified throughout this effort as being key to CIP development. Icons are utilized to denote which themes are addressed.

Themes of Promoting Healthy Communities

Identifying Needs

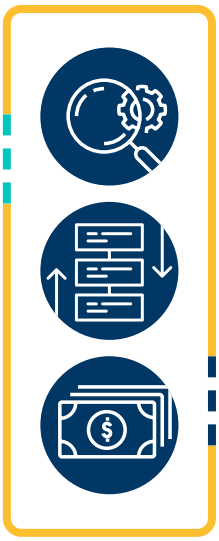
Prioritizing Projects

Funding and Programming

Post-Implementation Monitoring

FIGURE 15: *RECOMMENDATIONS TO IMPROVE CIP PROCESS*

3.1. DEVELOP A CLEAR INTERNAL PROCESS



Developing a clear internal process for how capital projects are defined, identified, and screened will help facilitate the flow of information and may boost collaboration between departments. All BMC jurisdictions would benefit from a publicly published internal process for CIP development and use of project charters and clear prioritization frameworks.

Actions:

- Develop clear guidelines for what constitutes a capital project and which projects therefore belong in the CIP
- Establish use of project charters that require the project sponsor to detail the scope, milestone, schedule, costs, risks, and justification for a capital need
- Outline preferred funding sources for project types
- Document process for capital needs identification, data sources (EAM), and considerations (e.g., equity and resiliency)
- Formalize prioritization process, including scoring criteria and alignment to other local plans
- Define public engagement strategy, timing, and tools

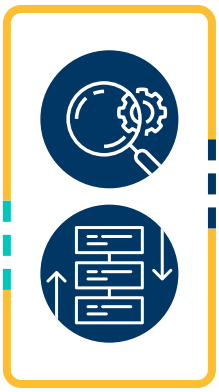
Barriers:

- Resistance to changing current process
- Shifting priorities and staff capacity
- Lack of data for data-driven needs and prioritization

Outcomes:

- Increased public input into CIP development
- Improved alignment of CIP projects to jurisdictional plans and priorities

3.2. VIEW ASSET MANAGEMENT THROUGH A RESILIENCY LENS



Viewing asset management and SGR through a resiliency lens means that jurisdictions should consider the condition of each asset in the prioritization process and the impact that asset's failure could have on transportation services and finances. Asset failure is associated with risk—and prioritizing assets that may become hazardous or fail, especially in light of increasing natural or man-made hazards, is a way to limit future spending on more costly repairs or replacement and service interruptions as well as jurisdictional liability for any failure.

Actions:

- Develop a detailed and up-to-date inventory of all infrastructure assets
- Quantify the impact of asset failure on services or other jurisdictional objectives (e.g., safety, finances, etc.) or determine asset criticality
- Develop and implement a formal process to monitor the condition of all assets (inspections to be determined based on regulation and/or asset criticality, with age or performance used for less-critical assets)
- Include asset criticality and condition in needs identification and prioritization process for CIP

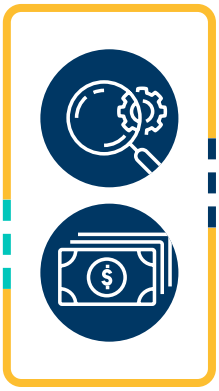
Barriers:

- Resistance to changing current process
- Lack of comprehensive asset data
- Lack of supporting software for inventory, condition, and risk assessment
- Cost of condition monitoring

Outcomes:

- Improved reliability and availability of transportation infrastructure
- Decreased financial burden for emergency repairs/replacements

3.3. DEVELOP A FISCALLY UNCONSTRAINED PLAN



Developing a fiscally unconstrained plan provides two key benefits to jurisdictions: the ability to communicate the gap in funding available versus infrastructure needs and a pipeline of unfunded projects for consideration if/when new funding becomes available. Jurisdictions should develop a process to track these unfunded needs in a formal, centralized inventory. This could occur by first gathering all known, unfunded needs and adding them to an initial spreadsheet or database to which all departments have access. After each subsequent capital improvement budgeting process, new, unfunded needs are added to the centralized list.

Actions:

- Develop a process to track unfunded needs in a formal, centralized inventory with regular updates
- Develop a process that outlines how unfunded needs can/will be addressed through long-range (10- to 20-year) plans or unconstrained CIP reporting

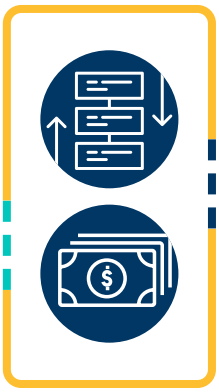
Barriers:

- Lack of data for truly unconstrained capital needs due to history of constrained budgeting
- Sensitivity to illustrating the level of "backlog" for public infrastructure
- Staff resources required to input unconstrained needs

Outcomes:

- Decrease in funding gap

3.4. ASSURE THAT PRIORITIZATION PROCESS CAPTURES MULTIMODAL, SGR, AND RESILIENCY INVESTMENTS



Prioritizing projects with multimodal, SGR, and/or resiliency elements in their scope improves coordination of projects across multiple silos. Jurisdictions could take several steps to improve prioritization to capture a range of project types. The first step is effective interdepartmental communication. A range of stakeholders should have an opportunity to provide input on a capital need.

Actions:

- Implement interdepartmental collaboration meetings to review projects, including safety, public health, technology, and other departments
- Consider developing a single budget for all infrastructure, as opposed to departmental budgets
- Evaluate existing prioritization metrics and whether they align with desired outcomes
- Implement criteria that benefit multimodal, SGR, and/or resiliency projects

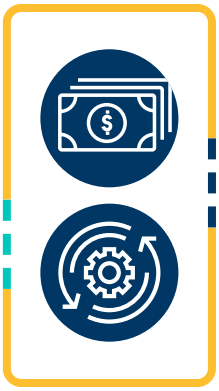
Barriers:

- Lack of local champion(s)
- Resistance to changing current process
- Traditional silos of project development and funding

Outcomes:

- Increased investment in projects that improve jurisdictional resiliency (decreased risk exposure)

3.5. HARNESS DIGITAL TOOLS TO AID IN BUDGET PRESENTATION, PROJECT TRACKING, AND COMMUNICATION WITH STAKEHOLDERS



Harnessing digital tools can help the public engage with traditionally lengthy budget documents, which may not be easily accessible or understood. Jurisdictions have found ways to improve the flow of information related to capital planning and increase transparency by creating online interfaces that translate budget line items and projects into clickable maps.

Key Takeaway: ArcGIS provides a suite of solutions to document and track capital projects, progress, and create inventories of existing infrastructure and assets. Alternatively, open-source maps may be a more cost-effective option, although most maps found through search have been created on the ArcGIS platform.

Actions:

- Compile the overall list of projects to be funded and any other relevant metadata (e.g., project name, project cost, a link to the project in the current CIP, etc.) to include
- Create online, interactive capital improvement portals (maps or other graphics)
- Advertise the new capital improvement map or portal on social media and other outlets
- Consider allowing for public participation in submitting or ranking of projects using these tools

Barriers:

- Project data availability
- Staff capacity

Outcomes:

- Increased public engagement with CIP process

3.6. INCORPORATE EQUITY ANALYSIS INTO PROCESS

Incorporating equity should happen throughout the capital planning process, influencing the development of the CIP from start to finish. Equity questions should be considered in identification of needs, prioritization measures, and assessment of impacts. In addition, jurisdictions should be transparent in their use of equity analysis in planning. The steps outlined below are iterative and should be repeated as the process matures.

Actions:

- Implement a diverse and inclusive outreach process for identifying capital needs
- Assess location of capital needs to determine if positive local impacts are concentrated in already well-served communities and negative local impacts are disproportionately located in vulnerable communities
- Incorporate equity measures into prioritization process and/or assess if existing metrics reinforce inequities or direct resources to historically underserved communities
- Consider providing a separate stream of funds to conduct a participatory budgeting process
- Provide transparency in the implementation process, particularly regarding tracking of equity metrics

Barriers:

- Resistance to change
- Difficulty in developing equity measures for systemic improvements (more than one location) and across SGR and expansion project types
- (Totally warranted) Distrust of public institutions by vulnerable populations

Outcomes:

- Improved transportation services and infrastructure in vulnerable communities

Endnotes

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THE FITZGERALD


STOPPING
CARS TOWED AWAY
BUS STOP
OR
PR
RD
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