

**GEORGIA DOT RESEARCH PROJECT 19-18**

**FINAL REPORT**

**ASSESSING THE IMPACT OF FEDERAL  
REQUIREMENTS ON GDOT PROJECT  
PORTFOLIO – VOLUME I**



**OFFICE OF PERFORMANCE-BASED  
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<p>16. Abstract: This volume is the first in a series. The other volume in the series is FHWA-GA-20-1918 Volume II: <i>Assessing the Impact of Federal Requirements on GDOT Project Portfolio – Volume II</i>.</p> <p>The Georgia Department of Transportation (GDOT) is responsible for the state's roads, bridges, interstate highways and other modes of transportation. In 2015, Georgia House Bill 170 (HB170) was enacted to create additional state revenue for transportation projects through a combination of new revenue sources (e.g., fuel, vehicle, and hotel taxes) and the elimination of certain tax breaks. Since its inception, HB170 funding has offered GDOT benefits such as increased flexibility in project delivery and the opportunity to deliver greater public benefit to citizens. Furthermore, GDOT has also been able to use HB170 to fund new projects managed entirely within a modified state process.</p> <p>New administrative complexity was introduced alongside the benefits of HB170: GDOT had to make an initial decision on process and funding source – and revisit those decisions over time. GDOT felt a need to formalize and standardize the process and funding decisions, ensuring the right inputs were present early to make better decisions across the project lifecycle. To address that need, in the fall of 2019, GDOT undertook an effort to develop a new funding allocation process. This effort resulted in a Flow Chart Decision Tool that details the logic flow of project attributes and considerations that would result in a decision to 1) follow a state process and use state funds, 2) follow a federal process and use federal funds or 3) take a hybrid approach.</p> <p>The research report consists of two volumes. Volume I includes a white paper summary of the background and benefits of HB170 funds, and the funding allocation process.</p>					
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GDOT Research Project No. 19-18

Final Report

ASSESSING THE IMPACT OF FEDERAL REQUIREMENTS ON GDOT  
PROJECT PORTFOLIO – VOLUME I

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SI* (MODERN METRIC) CONVERSION FACTORS				
APPROXIMATE CONVERSIONS TO SI UNITS				
Symbol	When You Know	Multiply By	To Find	Symbol
<b>LENGTH</b>				
in	inches	25.4	millimeters	mm
ft	feet	0.305	meters	m
yd	yards	0.914	meters	m
mi	miles	1.61	kilometers	km
<b>AREA</b>				
in <sup>2</sup>	square inches	645.2	square millimeters	mm <sup>2</sup>
ft <sup>2</sup>	square feet	0.093	square meters	m <sup>2</sup>
yd <sup>2</sup>	square yard	0.836	square meters	m <sup>2</sup>
ac	acres	0.405	hectares	ha
mi <sup>2</sup>	square miles	2.59	square kilometers	km <sup>2</sup>
<b>VOLUME</b>				
fl oz	fluid ounces	29.57	milliliters	mL
gal	gallons	3.785	liters	L
ft <sup>3</sup>	cubic feet	0.028	cubic meters	m <sup>3</sup>
yd <sup>3</sup>	cubic yards	0.765	cubic meters	m <sup>3</sup>
NOTE: volumes greater than 1000 L shall be shown in m <sup>3</sup>				
<b>MASS</b>				
oz	ounces	28.35	grams	g
lb	pounds	0.454	kilograms	kg
T	short tons (2000 lb)	0.907	megagrams (or "metric ton")	Mg (or "t")
<b>TEMPERATURE (exact degrees)</b>				
°F	Fahrenheit	5 (F-32)/9 or (F-32)/1.8	Celsius	°C
<b>ILLUMINATION</b>				
fc	foot-candles	10.76	lux	lx
fl	foot-Lamberts	3.426	candela/m <sup>2</sup>	cd/m <sup>2</sup>
<b>FORCE and PRESSURE or STRESS</b>				
lbf	poundforce	4.45	newtons	N
lbf/in <sup>2</sup>	poundforce per square inch	6.89	kilopascals	kPa
APPROXIMATE CONVERSIONS FROM SI UNITS				
Symbol	When You Know	Multiply By	To Find	Symbol
<b>LENGTH</b>				
mm	millimeters	0.039	inches	in
m	meters	3.28	feet	ft
m	meters	1.09	yards	yd
km	kilometers	0.621	miles	mi
<b>AREA</b>				
mm <sup>2</sup>	square millimeters	0.0016	square inches	in <sup>2</sup>
m <sup>2</sup>	square meters	10.764	square feet	ft <sup>2</sup>
m <sup>2</sup>	square meters	1.195	square yards	yd <sup>2</sup>
ha	hectares	2.47	acres	ac
km <sup>2</sup>	square kilometers	0.386	square miles	mi <sup>2</sup>
<b>VOLUME</b>				
mL	milliliters	0.034	fluid ounces	fl oz
L	liters	0.264	gallons	gal
m <sup>3</sup>	cubic meters	35.314	cubic feet	ft <sup>3</sup>
m <sup>3</sup>	cubic meters	1.307	cubic yards	yd <sup>3</sup>
<b>MASS</b>				
g	grams	0.035	ounces	oz
kg	kilograms	2.202	pounds	lb
Mg (or "t")	megagrams (or "metric ton")	1.103	short tons (2000 lb)	T
<b>TEMPERATURE (exact degrees)</b>				
°C	Celsius	1.8C+32	Fahrenheit	°F
<b>ILLUMINATION</b>				
lx	lux	0.0929	foot-candles	fc
cd/m <sup>2</sup>	candela/m <sup>2</sup>	0.2919	foot-Lamberts	fl
<b>FORCE and PRESSURE or STRESS</b>				
N	newtons	0.225	poundforce	lbf
kPa	kilopascals	0.145	poundforce per square inch	lbf/in <sup>2</sup>

\* SI is the symbol for the International System of Units. Appropriate rounding should be made to comply with Section 4 of ASTM E380. (Revised March 2003)

## **EXECUTIVE SUMMARY**

The Georgia Department of Transportation (GDOT) is responsible for the state's roads, bridges, interstate highways and other modes of transportation. GDOT's mission is to deliver a transportation system focused on innovation, safety, sustainability, and mobility. Until recently, GDOT projects were funded primarily with federal funds, which required GDOT to follow a federal process to execute its projects. In 2015, Georgia House Bill 170 (HB170) was enacted to create additional state revenue for transportation projects through a combination of new revenue sources (e.g., fuel, vehicle, and hotel taxes) and the elimination of certain tax breaks.

Since its inception, HB170 funding has offered GDOT benefits such as increased flexibility in project delivery and the opportunity to deliver greater public benefit to citizens. For example, GDOT has been able to fund previously federalized projects that were stalled because of lack of funding and revive projects that were paused when GDOT determined that the requirements, cost, and effort of the federal process exceeded project benefits. Furthermore, GDOT has also been able to use HB170 to fund new projects managed entirely within a modified state process.

New administrative complexity was introduced alongside the benefits of HB170: GDOT had to make an initial decision on process and funding source – and revisit those decisions over time. GDOT felt a need to formalize and standardize the process and funding decisions, ensuring the right inputs were present early to make better decisions across the project lifecycle.

To address that need, in the fall of 2019, GDOT undertook an effort to develop a new funding allocation process. This effort resulted in a Flow Chart Decision Tool that details the logic flow of project attributes and considerations that would result in a decision to: 1) follow a state process and use state funds, 2) follow a federal process and use federal funds or 3) take a hybrid approach.

HB170 has already created tremendous benefit for Georgia and will have generated nearly \$5B in revenue between 2016 and the end of 2020. Several years in, GDOT now has the ability to fully define an independent state process and institute training and capability building programs tied to this process. Further, a broader efficiency review can capitalize on new collaboration and information transparency across the organization. These improvements, along with the new funding allocation Tool, will continue to maximize the benefit of both HB170 and federal funds for Georgia citizens.

## **CONTEXT ON HOW GDOT HAS CAPITALIZED ON HB170 FUNDS**

Prior to 2015, GDOT received the majority of its funding from the federal government, which necessitated following federal coordination requirements and administrative processes to deploy these funds. The introduction of Georgia HB170 allowed for the generation of state transportation funds, giving GDOT latitude for the first time to choose which projects to fund with federal dollars and which to fund with new HB170 funding.<sup>1</sup> Using these state funds on capital

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<sup>1</sup> Federal funding can only be allocated toward projects that have followed and will continue to adhere to a federal process (i.e., projects that submit National Environmental Policy Act (NEPA) documents and coordinate with Federal Highway Administration (FHWA)). HB170 funding, in contrast, can be allocated toward projects following federal processes or those following newly defined state processes.

projects offers GDOT more ownership over the state's priority projects, whether by supplementing federal funds to avoid funding gaps or by opening up opportunities to follow a redesigned state process – already more lean than the federal process and with headroom to become even more efficient. HB170 also enables GDOT to complete projects faster by reducing external coordination for each project, reducing external review time, and allowing for the completion of activities concurrently. State funding increases flexibility for projects to be reprioritized or for timelines to change without generating excessive rework or delay. All these features allow GDOT to deliver public benefit to Georgia's citizens faster and with more autonomy, as well as to be better stewards of federal and state dollars. Importantly, HB170 funds do not allow GDOT to circumvent rules in place to protect the public trust (e.g., federal or state environmental regulations, historic preservation requirements) but, instead, create an avenue to reduce complexity and administrative burden in project delivery.

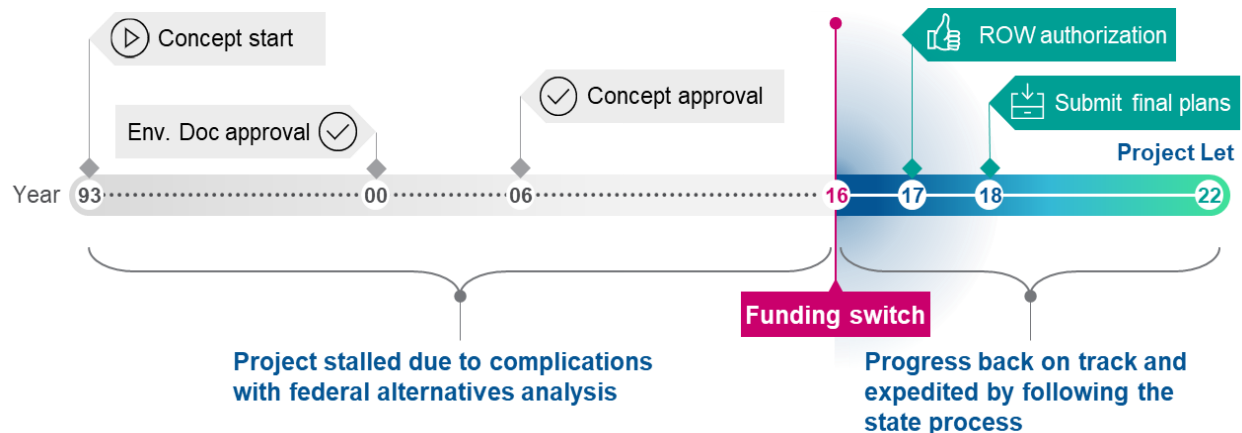
GDOT took immediate action in three areas to maximize the benefit of this new funding source:

### Benefits of HB170 funds:

- 1** **Ability to fund previously federalized projects** that were stalled due to lack of funding
  - 2** **Ability to fund previously federalized projects** that had been deemed not viable to federally fund and put on the shelf
  - 3** **Ability to fund new projects** managed entirely within a modified state process, which limits the back-and-forth required with federalization
1. *Used HB170 funding to supplement a series of federally-funded projects even as those projects remained federalized.* This allowed progress on and completion of projects that had been stalled because of lack of funding. For example, both Old Alabama Road Relocation and SR 382 underwent initial phases in the 1990s but were unlikely to be delivered without state funds to expedite project completion.
  2. *Switched a subset of projects to be fully-state funded and began to follow a newly defined state process.* In some cases, this expedited existing project timelines and in others it revived projects determined to be infeasible under the federal process (e.g., situations where extensive alternatives analysis required for federalization created unreasonable budget requirements, or where the logical termini required by the federal process would not match the state's need and purpose). For example, the McCaysville Truck Bypass saved up to a year in its schedule following the GEPA process to avoid additional alternatives analysis required for federalization.
  3. *Initiated some new projects with HB170 funds, defining the rough architecture for a leaner state process for these projects from inception.* This allowed GDOT to test new techniques for accelerating project delivery while ensuring compliance with state and federal regulations. For example, GDOT experimented with acquiring Right of Way (ROW) earlier than allowed by FHWA, as it did on CR 784/ Jerry Jones Drive/ Eager Road Baytree Road to Oak Street.

Initially, projects that benefited from HB170 were for the most part selected on an ad-hoc basis by GDOT senior leaders as funds became available. Today, GDOT has reached an inflection point in the availability of HB170 funds that calls for consciously codifying knowledge around the attributes that make a project a good fit for state funding – and, in turn, delegating those decisions down the chain to earlier and less experienced decision-makers.

### Example: HB170 revived a complex new location project



To consistently maximize the benefits derived from HB170 funds, GDOT set out to codify institutional knowledge and to redesign the process for making funding allocation decisions. The new process would be informed by a comparison of state and federal requirements on a project by project basis to determine the relative burden of following a federal vs. state process (shown through additional time, cost, and/or paperwork), and it would create an opportunity to pull known attributes of the project forward in decision-making to minimize rework, delay and administrative burden. It would yield both a more consistent upfront decision on project funding source, as well as increase consistency of decision making across the Plan Development Process (PDP).

### INITIAL CHANGES GDOT MADE TO MAXIMIZE PUBLIC BENEFIT OF STATE FUNDING

In November 2015, GDOT began to define what a new state process could look like with the addition of a new chapter to its PDP that described, at a high level, the differences between the existing federal process and Georgia's requirements. GDOT defined two major opportunities to make the state process more efficient: (1) overlapping major process steps (e.g., beginning the environmental and survey process earlier) which means that subsequent steps may begin before a preceding step has been completed; and as a major subset of that idea, (2) beginning right-of-way (ROW) acquisition early, which can happen earlier in the process depending on risk and before or after environmental technical studies are complete.

In parallel, GDOT also undertook a number of initiatives aimed at reducing friction in the federal process and accelerating delivery timelines and public benefit, including:

- *Systematically implementing programmatic agreements with various federal agencies to streamline common tasks and requests.* These agreements empower GDOT to coordinate directly with other state agencies and build stronger and more centralized relationships within the state.

- *Developed and implemented tools to improve working processes with federal agencies.* For example, the Air-Carbon Monoxide (CO) Screening Tool reduces costs by dramatically reducing the time needed to complete intensive air quality analyses required by FHWA while still ensuring compliance with environmental regulations.
- *Proactively sought ways to reduce the amount of rework on projects.* GDOT revised and updated its Local Coordination Procedure (LCP) for use with both FHWA and the USACE to create predictability in the environmental process for major widenings and new location projects by ensuring early alignment on proposed alternatives.
- *Invested in better coordination with FHWA by revising and updating NEPA policies and agreements (e.g., Revised NEPA Reevaluation Policy, Abbreviated FONSI Development, and Revision of the PCE Agreement).*

These efforts undertaken both at an agency-wide level, as well as initiated in the context of individual projects, represent the broader focus on efficiency and continuous improvement GDOT pursued following HB170 availability.

## **GDOT SET OUT TO REDUCE COMPLEXITY FROM HB170 AND ENABLE GREATER PUBLIC BENEFIT**

HB170 opened up new opportunities, but it also increased GDOT's decision-making complexity. New projects would have associated decisions around both which process to follow (federal vs. state) and which funding source to use. Reversing a decision after work had begun could create rework, administrative burden and delay – putting the pressure on GDOT to make early, consistent decisions that would hold over time.

Beginning in fall 2019, GDOT conducted a postmortem on a selection of project work undertaken or completed since HB170's inception to understand the implications of process and funding decisions on its project portfolio. The assessment examined drivers of complexity and burden for projects, current decision-making processes, and available information at different stages of the PDP that could sway process or funding decisions.

GDOT identified two opportunities to improve its current-state decision processes:

First, funding and process decisions can more consistently be considered in parallel and in the correct order. For example, in the past, the Office of Planning would assign a fund type (state vs. federal) as a placeholder, then the Office of Program Delivery (OPD) would begin to follow the associated process. This could then determine which funding type the Office of Planning eventually finalized.

Second, GDOT can increase collaboration and knowledge sharing across siloed parts of its organization (e.g., Office of Planning, Office of Environmental Services, Office of Program Delivery) to aggregate inputs and make a more informed early decision on process and funding. For example, in the past, the Office of Environmental Services (OES) had the knowledge and expertise to assess expected federal burden based on project location and limited information about project characteristics. However, the Office of Planning was not aware that OES could make such an assessment and therefore was not incorporating OES's input into an initial project

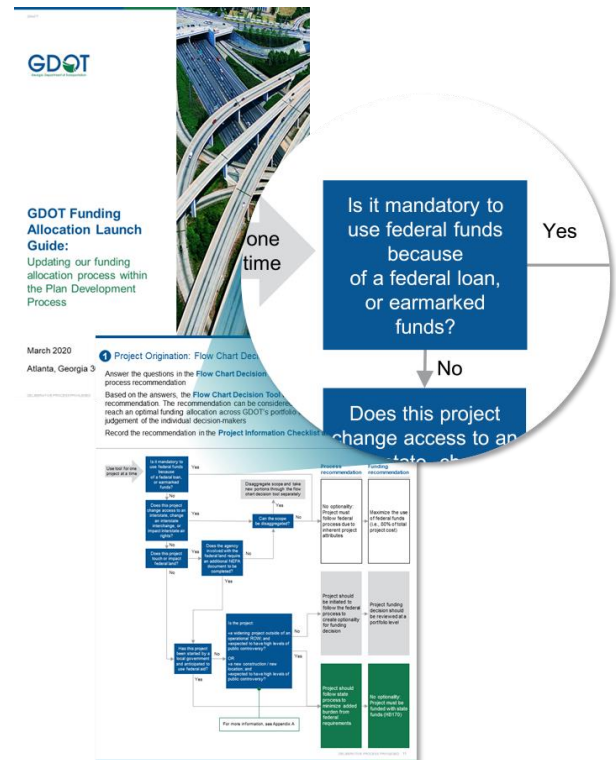


funding decision -- even when that funding decision sometimes locked in a default process decision, as described above.

Addressing these two opportunities will lead to more efficiency in the use of HB170 funds, but the postmortem analysis also supported GDOT's perceived need for a structured, rigorous process for making funding decisions. A new funding allocation process that would address all these parameters would enable GDOT to make decisions at the right time, based on the early information from experts across the organization.

## GDOT'S PLAN TO UTILIZE HB170 FUNDS AND DEVELOP A FUNDING ALLOCATION PROCESS

To address both complexities, GDOT developed a new internal decision process to guide decision makers from the Office of Planning and OPD through all questions relevant to project funding decision and ensure that they are collaborating with other organizations. Built into this new process is a Tool to ensure consistent funding allocation recommendations are made. The Tool uses known or expected project attributes to determine (1) whether there is a default decision to be made regarding federal or state process and funding and (2) what the relative burden of federalization would be if there is no default decision. In addition to directly facilitating consistent decisions through a revised process, the Tool will also build understanding across decision-makers as to how the project attributes shape the decision and prompt additional as project information becomes available.



In order for the new process to be successful, GDOT decision-makers at multiple levels will need to demonstrate ownership over the process – and the supporting Launch Guide and Tool. This includes understanding the attributes and inputs required to use the Tool and making operational changes in the flow of information (e.g., developing handoff packets) to get the right information to the right stakeholders at the right time. Individual decision makers may also require training to build the skills and capabilities needed to operate differently. GDOT leaders can increase the likelihood of success by clearly and frequently communicating the value they expect from the new process. For example, they could discuss the planned change during an office-wide monthly meeting, call out early examples of success, and/or role model their involvement in the new decision process.

The new process and use of the Tool are detailed in a Launch Guide. Described in detail in Appendix 2, GDOT has identified four points in the project process where better coordination is required to fully take advantage of HB170, and, as captured in the Launch Guide and Tool, GDOT has identified the appropriate guidelines, questions to ask and stakeholders to involve at each juncture:

- **Project Origination:** During the Project Origination phase, the Office of Planning can change its processes to aggregate project details from various teams and stakeholders at GDOT, pulling forward information where it can be known to make a better-informed decision.
- **Project Team Initial Process (PTIP):** At the PTIP phase, OPD is responsible for being fully up-to-speed on the funding allocation decision and aggregating project details from the Office of Planning, OES, and OPD leadership to determine whether a change in funding is necessary.
- **Concept Update:** At the Concept Update phase, by which point project attributes can be known with a fair amount of certainty, OPD should continue to aggregate project details from OES and OPD leadership and confirm the funding allocation decision.
- **Trigger Points:** OPD (and the project-specific PM) should be aware that there are various identified trigger points (e.g., significant increase in cost or schedule, change in funding year, etc.) that may impact the funding allocation decision. They should highlight if one of these 'triggers' has occurred, which would prompt escalation to the Director of Program Delivery.

The Launch Guide and Tool can function as a job aid to facilitate the transition between GDOT's current funding allocation process and the new funding allocation process and can also be used to onboard and train employees in this new process and ensure its consistent use.

## FUTURE OUTLOOK FOR MAXIMIZING USE OF HB170



For every additional \$1 spent on transportation, **\$1.85 of local economic impact is generated**<sup>3</sup>



Additional transportation funding ensures that **more projects critical for state connectivity are funded and completed on time**

Federal and state funds both generate huge benefits for Georgia citizens, but these different funding types can go even farther with strategic decision-making around process and funding source. Used wisely, state funds can expedite projects, revive projects thought to be infeasible under federalization, and reduce the cost and schedule burden of federalization on a project-by-project basis. The local economic benefits of reviving or expediting these projects is known: Statewide, Georgia has an economic multiplier of 1.85 for road and bridge construction, engineering, and maintenance. For every \$1 spent, these funds generate \$1.85 of local economic impact. Each project that Georgia can strategically complete with these funds generates additional economic impact for the impacted area.

GDOT has taken concrete action to make the most of HB170 over the past 4-5 years and continues to be even more strategic with its funding allocation decisions. The next horizon of opportunity involves expediting state projects further with a fully independent state process that still follows design best practices and all federal laws and regulations. Instead of starting with the federal process and removing steps that are not required, GDOT could "clean sheet" the process

<sup>2</sup> SOURCE: IMPLAN, Carl Vinson Institute of Government

from scratch, beginning with only steps required by state and federal laws and then layering in design best practices. This could unlock additional opportunities to complete work in parallel, sequence work differently and generally expedite projects. GDOT could also undertake a training and capability building exercise within its organization to ensure OPD and OES understand the state process fully and do not revert to following the process they know best – the federal process. By redesigning an efficient state process and making sure it sticks, GDOT will be able to put HB170 funds to their full, maximized use.

## APPENDIX 1: Details on the Launch Guide and Flow Chart Decision Tool

To maximize the use of future federal or state funds, the new funding allocation process should involve making an initial allocation decision at Project Origination and revising that decision at PTIP and Concept Update, as well as in the event of any defined Trigger Points. Defining times at which to revise allocation decisions will reduce the likelihood of late-in-the-process switches, which create substantial rework for project teams. Projects should either 1) follow the federal process and max out federal funds, 2) retain optionality by following the federal process but reviewing funding decisions at a portfolio level, or 3) follow the state process and use all state funds (see Figure 1).

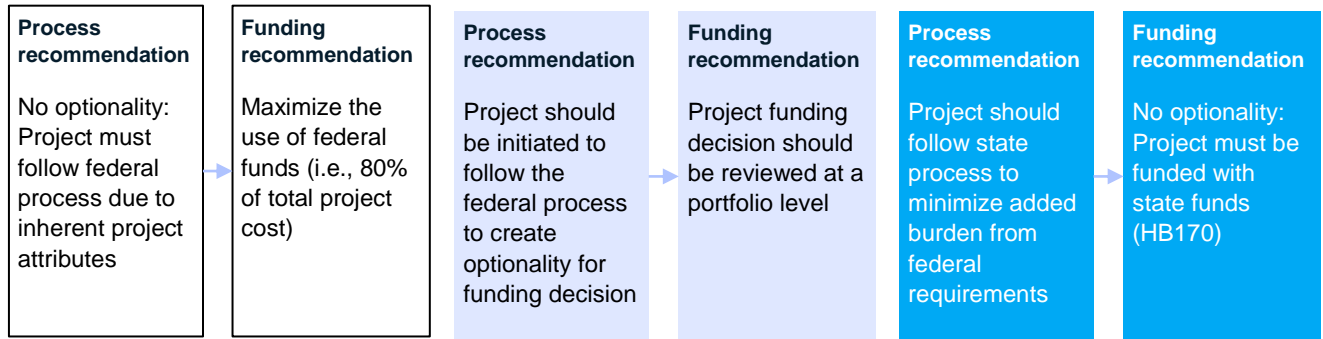


Figure 1. *Three pairs of options for process and funding recommendations*

In order to determine a recommendation, GDOT will utilize a Flow Chart Decision Tool, that will ask a set of questions to ensure that projects with no option but federalization are federalized and that all others are led to recommendations by attributes and associated burden (see Figure 2).

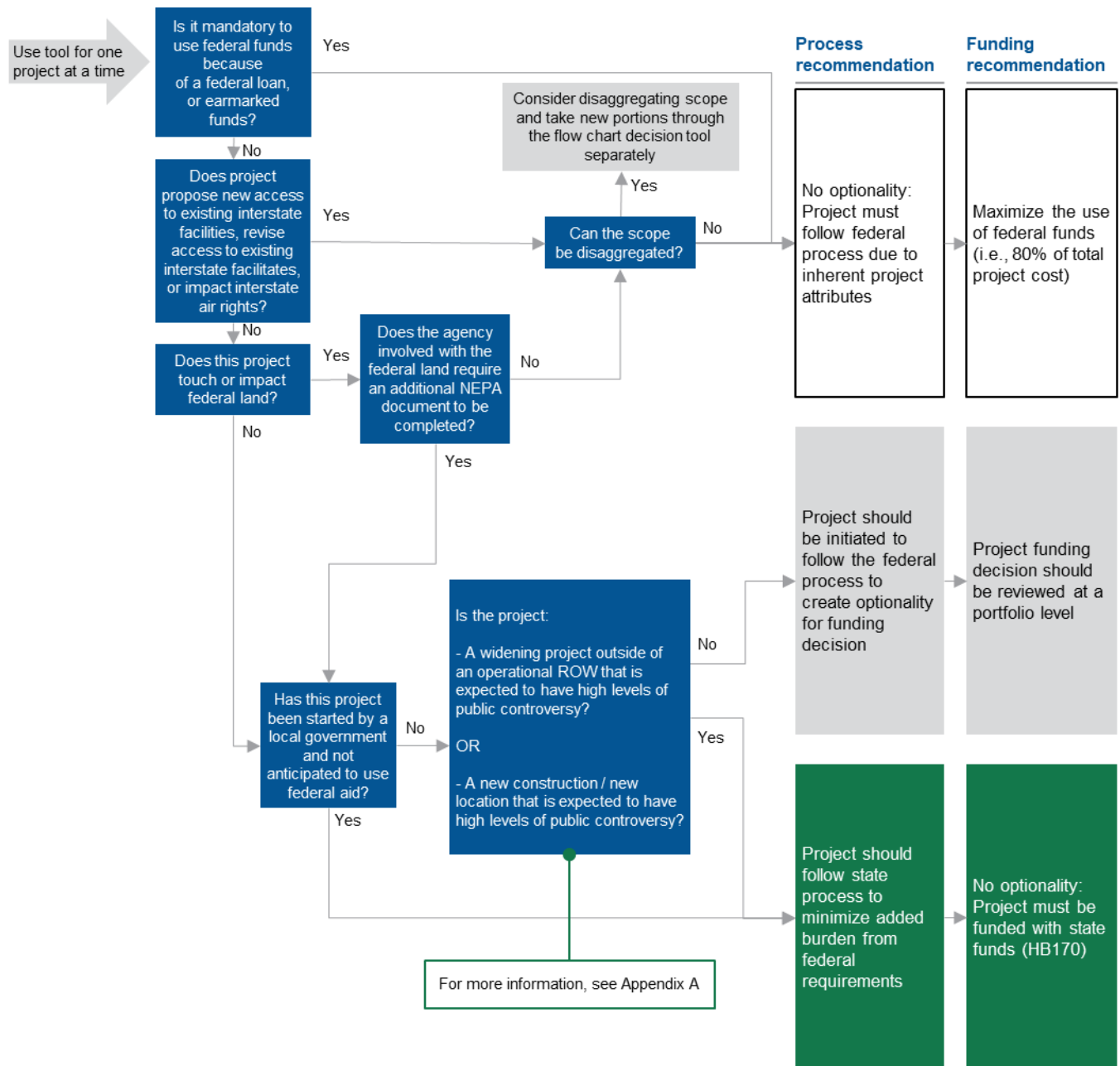


Figure 2. Flow Chart Decision tool to be used at Project Origination

## Project Origination

At Project Origination, the Office of Planning is responsible for aggregating project information, using the Project Information Checklist and the Programming Request Form. These forms highlight information Office of Planning needs to develop a more detailed understanding of project details and Tool questions to determine a process and funding allocation decision for the project. This recommendation is passed along to the Office of Financial Management in the Program Memo. At the end of this process, the Office of Planning must aggregate the Programming Request Form, the Project Information Checklist and the Program Memo and

compile them into a Handoff Packet. This Handoff Packet should then be placed in a Project Wise file, as well as sent to the Office of Financial Management.

## **PTIP**

At PTIP, the new funding allocation process creates an opportunity for GDOT to review and revise the project funding allocation decision. The PTIP phase begins when Program Control assigns an office (in this case, the office assigned would be OPD). OPD is responsible for getting up to speed on the Project Origination details, including the funding and process decision, prior to the PTIP meeting. OPD is also responsible for aggregating project information before the PTIP meeting through the Project Information Checklist. The Project Information Checklist will equip the OPD to answer all the questions from the Tool and determine whether a revision is needed to the project's process and funding allocation decisions. OPD should bring this information to the PTIP meeting, run by the government estimator, and discuss the Tool's recommendation with the broader group. OPD is responsible for recording the decision on project process and funding in the Project Information Checklist to ensure continuity.

## **Concept Update**

Similarly, the new funding allocation process creates an opportunity for GDOT to review and revise the project funding allocation decision at Concept Update. By Concept Update, a project-specific PM has been assigned. The project-specific PM is responsible for aggregating project information before the Concept Update meeting through the Project Information Checklist. This will require the project-specific PM reaching out to OES and requesting guidance from OPD leadership. The Project Information Checklist will equip the project-specific PM to answer all the questions from the Tool and determine whether a revision is needed to the project's process and funding allocation decision for the project. The project-specific PM should then bring this information to the Concept Update meeting and discuss the Tool's recommendation with the broader group. The project-specific PM should be actively responsible for leading this discussion and soliciting input from the other offices. At the end of the Concept Update meeting, the project-specific PM is responsible for recording the decision on project process and funding in the Project Information Checklist, to ensure continuity in case of project handoff to different PM.

## **Trigger Points**

In addition to Project Origination, PTIP and Concept Update, a project's funding and process decision should be revisited in the case of a Trigger Point. The project-specific PM is responsible for determining if any of these Trigger Points occur and then alerting a District PM of the change. Trigger Points include a cost increase of \$2M or 20%, a change in expected funding year, a schedule increase of more than 3 months, a change in the environmental document type, and a change in whether a full 4(f) process is required. Together, both the District PM and the project-specific PM should assess the effects of the change and fill out a Change in Project Understanding Form. This Form is submitted to the Director of Program Delivery, who will determine what, if anything, should change. In the event of an expected change, the project-specific PM is responsible for communicating the change to the Office of Planning and other involved parties.

## **APPENDIX 2: Methodology overview:**

Detailed project data was reviewed for 19 projects and over 20+ interviews were conducted. These projects represented all major categories of projects in the construction work program in the capital portfolio, including new alignments/new locations, widenings, and interchanges. Projects within the bridge portfolio were also reviewed for context only. The 19 projects reviewed represented a mix of funding types and environmental document types: 8 of 19 projects assessed in the postmortem started and stayed NEPA (following the federal process), 4 of 19 projects assessed started and stayed GEPA (following the state process), 7 of 19 projects assessed switched from NEPA to GEPA (beginning with following the federal process but switching to follow the state process).

For every project, reviewed project data included the Preconstruction Status Report ("PSR") and Concept Report. For some projects, additional data such as emails, revised reports and interoffice memos were reviewed, where available.

