The information and analysis contained herein is preliminary in nature and for planning purposes only, and cannot be relied upon by any third party. The scenarios, costs and financial projections were prepared in good faith and with reasonable care but are limited by the conceptual nature of the project. Data provided is subject to change and the scenarios and results provided may vary from those resulting from any procurement process.
1.1. Introduction and Project Background

1.1.1. The Ohio Department of Transportation (ODOT) proposes development of a four-lane, divided, limited-access highway around the City of Portsmouth in Scioto County, Ohio. The highway, to be designated State Route 823 (SR 823), is known as the Portsmouth Bypass and will comprise 16 miles of four lane divided highway, bypassing approximately 26 miles of US 52 and US 23 through Portsmouth as illustrated in Figure 1.1.

Figure 1.1: Portsmouth Bypass Proposed Alignment
1.1.2. The project will improve travel and regional mobility, avoiding significant numbers of traffic signals, intersections, and driveways over the current 26 mile route using US 52 and US 23. The proposed 16-mile new route is estimated to provide travel time savings of up to 16 minutes per trip over the current route using US 23 and US 52. The large number of access points and traffic signals currently compromise US 23/US 52’s ability to safely and efficiently serve its intended function of a primary arterial. The goal of the Portsmouth Bypass is to close this gap in the multi-state corridor and thereby provide close to a full access-controlled alternative to I-77 and I-75 for reaching Columbus, Ohio from the south, saving over 70 miles on some trips.

1.1.3. ODOT also proposes to consider alternative delivery approaches for the long-term maintenance of the Portsmouth Bypass as well as various US and State Routes currently maintained by ODOT within the surrounding area of the Portsmouth Bypass.

1.2. Project Objectives

1.2.1. ODOT’s objectives in terms of project delivery include:

- Completion of a high quality Bypass as quickly as possible, taking advantage of competitive construction costs and low interest rates;
- Ensure that the Bypass is maintained to an appropriate standard,
- Achieve economies of scale from construction and maintenance,
- Achieve innovation in construction and maintenance approach,
- Minimize state funds used on the project to allow a greater proportion of ODOT’s work program to be delivered,
- Maximize market interest and competition in the project through the selected procurement alternative,
- Maximize project cost and schedule certainty, and
- Allocate project risks and responsibilities to the parties best placed to manage them.

1.3. Delivery Alternatives Analyzed

1.3.1. The project includes construction and maintenance of Portsmouth Bypass and, potentially also operation and maintenance of the existing Scioto County road network. As part of this analysis, two delivery approaches have been considered:

- A Public Private Partnership (PPP) approach, under which a private Developer would be responsible for the design, construction, financing, operation and
maintenance of the Portsmouth Bypass for a long term contract period of up to 40 years from the start of construction of the Bypass. The private Developer would also assume responsibility for operation and maintenance of a surrounding network of 17 State and US routes in Scioto County, indicated in Figure 1.2, for the same period. ODOT would make availability payments to the PPP Developer over the contract term, commencing upon substantial completion of the construction of the Portsmouth Bypass, with deductions made from availability payments for failure to meet performance or availability criteria.

Figure 1.2 - Scioto County Network

- A more traditional public sector delivery approach (the “Public Sector Comparator” (PSC) alternative) using a Design-Bid-Build (DBB) procurement approach, whereby the Portsmouth Bypass would be constructed in three phases over 13 years as currently scheduled in ODOT’s capital plan: Phase I – January 2014 to December 2016; Phase II – January 2017 to December 2021 and Phase III – January 2022 to December 2026. ODOT would continue to provide operations and maintenance for both the Scioto County network and the new Portsmouth Bypass for the remaining period of up to 40 years from the start of construction of the Bypass, with routine maintenance being undertaken by ODOT District 9 and individual capital maintenance projects being contracted as required.
1.3.2. Qualitative comparison of the delivery alternatives highlights that trade-offs exist in each alternative. The PPP transfers a significantly higher proportion of project risk to the private partner than the PSC, although it requires ODOT to negotiate if changes are needed during the life of the long term agreement.

1.3.3. The respective qualitative advantages of each option include:

<table>
<thead>
<tr>
<th>Qualitative advantages of PPP</th>
<th>Qualitative advantages of PSC</th>
</tr>
</thead>
<tbody>
<tr>
<td>• The entire project will be completed up to eight years earlier under the PPP than the PSC based on current schedule forecasts, accelerating user benefits, reducing congestion and improving air quality more quickly, generating jobs and driving economic development in the region as well reducing the length of time construction traffic is present in the area.</td>
<td>• Under the PSC alternative, ODOT has the option of being able to decide when maintenance should be carried out and can alter its work program without needing any negotiation, increasing flexibility for ODOT to defer maintenance in the future to manage budget.</td>
</tr>
<tr>
<td>• ODOT payments for the project can be spread over a longer period of up to 40 years, and not commence until the construction of the Bypass has been completed – with lower impact on ODOT’s ability to deliver other short term projects in its work program.</td>
<td>• ODOT has significant institutional experience of delivering DBB projects, while this would be the first project ODOT will have delivered using a PPP contract structure.</td>
</tr>
<tr>
<td>• The PPP provides price and schedule certainty over the long term, which the PSC does not.</td>
<td>• The same party is responsible for all construction and maintenance under the PPP, thereby providing an effective long term warranty of the Bypass construction and guaranteeing a consistent maintenance standard for the Scioto County network as well as ensuring the asset is handed back to ODOT at a guaranteed standard at the end of the contract. The PPP also reduces the number of contractual interfaces that ODOT needs to deal with and thereby reduces the potential for contract dispute which would result from a more disaggregated arrangement in the PSC.</td>
</tr>
<tr>
<td>• The PPP alternative is eligible to apply for a TIFIA loan for up to 35 years (from substantial completion of the Bypass) at a cost of borrowing below that of ODOT. The PSC is not eligible to</td>
<td></td>
</tr>
</tbody>
</table>


apply for TIFIA.
- The PPP alternative transfers a higher proportion of project design and construction risk to a private partner, providing certainty of performance and cost over the long term.

1.4. Quantitative Analysis

1.4.1. Recognizing that many of the key assumptions behind quantitative analysis at this stage of project development will be subject to future change, comparative financial analyses of the possible cost to ODOT of the delivery alternatives has been prepared.

Base case

1.4.2. The following table summarizes the responsibilities under each of the delivery alternatives and which form the base cases for the analysis:

<table>
<thead>
<tr>
<th>Activity</th>
<th>PPP</th>
<th>PSC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Portsmouth Bypass Construction</td>
<td>Developer: Jan 2014 – Dec 2018 (5 years)</td>
<td>ODOT DBB Contractor</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(Construction Schedule assumes TRAC funding will be available): Phase I: Jan 2014 – Dec 2016; Phase II: Jan 2017 – Dec 2021; Phase III: Jan 2022 – Dec 2026 (13 years)</td>
</tr>
<tr>
<td>Scioto County maintenance network (17 US and State routes)</td>
<td>Developer responsible for routine and capital maintenance (2014-2053)</td>
<td>ODOT responsible for routine and capital maintenance (2014-2053)</td>
</tr>
<tr>
<td>Portsmouth Bypass maintenance</td>
<td>Developer responsible for routine and capital maintenance (2019-2053)</td>
<td>ODOT responsible for routine and capital maintenance as each phase is completed (2016-2053)</td>
</tr>
</tbody>
</table>

1.4.3. The base construction costs for the PSC have been developed from the 2011 FHWA cost estimate review of ODOT’s DBB cost estimate for the three phase project. The routine and capital maintenance cost estimates have been based upon the current cost of ODOT service delivery with additional operating ‘soft’ costs included for oversight, inspections, advisors, and administration. The FHWA review also identified a premium relating to potential construction cost change orders under the DBB alternative, which has been incorporated into the base PSC construction cost estimate.

1.4.4. The base PPP construction costs have been based upon a single phase, five year Design-Build sub-contract, with additional soft costs added specific to the PPP delivery alternative. The routine and capital maintenance costs have been developed
based on ODOT’s forecast cost of maintenance delivery, plus a maintenance operating ‘soft’ cost associated with Developer overheads, independent engineer, legal and technical advisors, bridge and pavement inspection and administrative costs.

1.4.5. One of the benefits of a PPP is that the integration of construction and maintenance responsibility encourages efficient design and preventative maintenance on a whole life basis. ODOT anticipates that a private Developer may be able to generate cost efficiencies in both routine and capital maintenance compared to the PSC option\(^1\), and as such, the base case PPP alternative incorporates 5% efficiency savings in capital and routine maintenance costs compared to the PSC.

1.4.6. There is an additional small difference (approximately 2% of total cost) between capital maintenance in the two delivery alternatives arising as a result of the prolonged heavy construction traffic on the wider Scioto County network during a 13 year PSC construction period creating a slightly higher capital maintenance cost compared to the PPP, which has a more compressed five year construction period.

1.4.7. Figure 1.3 illustrates the base case cost profile to ODOT of the different delivery alternatives over the analysis period.

Figure: 1.3- Comparison of ODOT cash payments under PPP and PSC

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\(^1\) ODOT has recently undertaken a review of private delivery of Operations and Maintenance services which indicated that other jurisdictions have achieved savings of up to 15% on private delivery of routine maintenance services (“ODOT Service Delivery Assessment – Operations and Maintenance”, December 2012).
1.4.8. Note that the PPP alternative defers the majority of the cash requirement from ODOT until the Bypass has been completed. The early payments in the PPP represent the use of existing Appalachian Development monies as milestone payments to the Developer.

1.4.9. The red line illustrates the profile to ODOT of the PSC option, with the expected spend profile being more irregular, requiring a higher initial spend by ODOT over a three phase, 13 year construction period. It should be noted that ODOT forecasts relatively high and volatile construction inflation in future years, and therefore extending construction over a longer period as in the PSC has an adverse impact on the cost of the project in year of expenditure dollars.

1.4.10. Figure 1.3 clearly shows the comparative trade-off for ODOT of significantly lower cash requirements in the early periods of the project under the PPP alternative, but with higher, regular cash cost in the future.

1.5. Discount Factors

1.5.1. Figure 1.3 illustrates that the PPP and PSC alternatives have very different spend profiles to ODOT. For some agencies, per year budgetary impact is the most important factor. Another way to compare these different cost profiles is in present day dollars (i.e., to calculate a “Net Present Cost” or “NPC”). This is often accomplished through the process of discounting each of the alternatives’ cash flows using discount factors. It is important to note that present value amounts are purely a comparative metric - actual expenditures are always in nominal dollars over time.

1.5.2. The discount factor applied can be based upon the public sector’s cost of capital, risk and/ or other factors. For the purposes of presenting the net present cost of Portsmouth Bypass, the analysis utilizes a range of discount rates ranging from 3.5% to 5.0%, representing a reasonable range of costs of capital relevant to the project.

1.6. Comparison of Net Present Cost of Delivery Alternatives

1.6.1. Discounting the year of expenditure dollars for the base case costs of each delivery alternative (unadjusted for ODOT’s retained risk) back to a common net present cost using the range of discount rates produces the following outputs:

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3 A dollar in hand today has greater value than one received in five years, even after adjusting for inflation, because the dollar in hand now can be invested. Likewise, a dollar spent today is more costly than a dollar spent in the future.
<table>
<thead>
<tr>
<th>Base Case</th>
<th>Net Present Cost at 5% discount rate</th>
<th>Net Present Cost at 3.5% discount rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>PPP</td>
<td>$570M</td>
<td>$750M</td>
</tr>
<tr>
<td>PSC</td>
<td>$644M</td>
<td>$757M</td>
</tr>
<tr>
<td>Difference</td>
<td>$74M</td>
<td>$7M</td>
</tr>
<tr>
<td>Difference</td>
<td>13%</td>
<td>1%</td>
</tr>
</tbody>
</table>

1.6.2. The largest drivers of whether the net present cost of the project favors the PPP or PSC alternative are the cost assumptions. As noted above, the base costs underlying both the PSC and PPP alternatives are broadly similar and have not been subject to significant adjustments, with a 5% reduction to maintenance costs in the PPP scenario to reflect the possible impact on pricing of efficiencies from economies of scale, innovation and competition.

1.6.3. Figure 1.4 shows the impact on the difference in net present base case cost between the PPP and PSC alternatives at different discount rates. The x-axis indicates the difference between the PPP and the PSC projections (where positive numbers on the x-axis of the chart denote that the PPP has a lower net present cost), while the y-axis indicates the discount rate used.

**Figure: 1.4 – Difference in NPC of PPP and PSC at different discount rates**

1.6.4. Figure 1.4 illustrates that using the base case assumptions (prior to testing the impact of any potential additional efficiencies which may be generated by the PPP, or the
risk of assumed conditions not occurring), the net present cost of the PPP option is forecast to be lower than that of the PSC at all discount rates between 3.5% and 5%.

1.7. **Scenario Analysis**

1.7.1. A number of scenarios on key variables have been analyzed to assess the impact on the comparative net present cost of project if it was to be delivered as a PPP or under a traditional (PSC) option. These key variables include construction costs, routine and capital maintenance costs, interest rates and inflation. The impacts of these scenarios are indicated in the table below, and are discussed in more detail in the following sections.

*Figure: 1.5 – Summary of scenarios*

<table>
<thead>
<tr>
<th>Scenario</th>
<th>NPC at 5% discount rate</th>
<th>NPC at 3.5% discount rate</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>PPP</td>
<td>PSC</td>
</tr>
<tr>
<td>(1) Base Case</td>
<td>$570m</td>
<td>$644m</td>
</tr>
<tr>
<td><strong>Construction Cost Scenarios</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(2) 10% construction cost overruns</td>
<td>$570m</td>
<td>$684m</td>
</tr>
<tr>
<td>(3) 5% efficiency in PPP construction pricing</td>
<td>$550m</td>
<td>$644m</td>
</tr>
<tr>
<td>(4) 10% efficiency in PPP construction pricing</td>
<td>$531m</td>
<td>$644m</td>
</tr>
<tr>
<td><strong>Routine &amp; Capital Maintenance Scenarios</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(5) 5% efficiency in PPP routine maintenance</td>
<td>$566m</td>
<td>$644m</td>
</tr>
<tr>
<td>against base case</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(6) 5% efficiency in PPP capital maintenance</td>
<td>$564m</td>
<td>$644m</td>
</tr>
<tr>
<td>against base case</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Interest Rate Scenario</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(7) TIFIA rural interest rate unavailable</td>
<td>$615m</td>
<td>$644m</td>
</tr>
<tr>
<td><strong>Inflation Rate Scenario</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(8) Construction inflation lower by 1.5% per year</td>
<td>$544m</td>
<td>$604m</td>
</tr>
<tr>
<td><strong>Combined Scenario</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(9) Combined 5% PPP routine &amp; 5% capital maintenance efficiency against base, 5% construction efficiency</td>
<td>$541m</td>
<td>$644m</td>
</tr>
</tbody>
</table>
1.8. **Construction Costs**

1.8.1. A key difference between the PPP and PSC options is the way in which construction cost overruns impact ODOT. The PPP option includes a fixed price and fixed schedule meaning that any construction cost overruns are borne by the Developer and its subcontractors and would not impact the cost of the project to ODOT. This is contrary to the PSC option, where construction cost overruns would revert to ODOT.

1.8.2. The risk of construction overruns can have a material impact on the analysis of different delivery options. For example, a 10% overrun on construction to both the PPP and PSC would increase the projected present cost of the PSC to ODOT to $684M, $114M higher than the PPP option (assuming a 5% discount rate), while the cost to ODOT of the project under the PPP alternative would not increase at all as a result of a cost overrun. Even at the low end discount rate of 3.5%, a 10% cost overrun to the project would widen the difference in present cost of the options to $52M in favor of the PPP option.

1.8.3. The PPP delivery alternative uses a more integrated approach to procurement than the PSC, and a range of potential efficiencies in cost have been achieved in PPP procurements in other jurisdictions. Construction costs significantly below engineers’ estimates have been realized in some completed PPP projects, particularly technically complex procurements. While Portsmouth Bypass does not have an extreme level of technical complexity, and recognizing that the basis of the saving is conditional on the accuracy of the initial estimate, it is possible within the context of US PPP project precedents that there may be opportunities for construction price efficiencies under a PPP delivery model. For example, the single phase construction used in the PPP may allow different approaches to optimizing earthworks which account for a large percentage of the overall construction cost. As such, sensitivities testing the impact of 5% and 10% reductions in the PPP construction cost have been prepared and are summarized in Figure 1.5 above, indicating increased benefit which results from the PPP.

1.9. **Routine and Capital Maintenance Costs**

1.9.1. Similarly, the combination of construction and maintenance responsibility through a PPP alternative encourages maintenance cost to be optimized throughout design and construction to minimize the whole life cost of the project, creating potential maintenance savings under a PPP alternative.
1.9.2. Portsmouth Bypass is also located in a region where there has historically been limited competition, particularly for paving contracts for which ODOT has received a single bidder for the past six years. Based on initial consultation, market interest in an availability payment PPP is high at the present time and the potential benefit of additional competition on otherwise uncompetitive elements of the project could be notable. An April 2012 FHWA audit report into 1,671 ARRA projects highlighted the potential value of a second bidder to procurement, with single bidder contracts attracting prices averaging 103% of engineers’ estimates, while projects attracting two bidders producing average pricing at 93% of engineers’ estimates.

1.9.3. It is therefore possible that ODOT may realize pricing efficiencies in respect to the construction, and/or maintenance elements of PPP procurement. However, ODOT has not yet delivered a project using a PPP approach and the extent to which pricing may be realized in the context of Ohio is uncertain. The base case costs assume that the PPP option will be able to realize 5% efficiency savings in routine and capital maintenance costs, however it is appropriate to test the impact on the comparative analysis if different levels of PPP pricing were to be achieved. The impact of alternative levels of pricing in the PPP has been summarized in Figure 1.5 above.

1.10. External Factors – Interest and Inflation Rates

1.10.1. The PPP and PSC base cases highlight that the net present cost of the PPP option would be lower than the PSC for any discount rate between 3.5% and 5%. Two key assumptions drive the relative benefit of the PPP option:

- The PSC alternative incurs construction costs over a prolonged 13 year period, during which period ODOT forecasts high construction inflation. As such, it becomes more beneficial to deliver the project quickly using a PPP and incur financing costs than to defer construction under the PSC and incur increased price escalation.
- The base case PPP option assumes the project will be able to access a TIFIA loan at a rural set aside interest rate, approximately half of the Treasury rate - an extremely low cost with maturity up to 35 years beyond substantial completion.

1.10.2. There is clearly a risk to ODOT that these assumptions are not realized. ODOT has submitted a Letter of Interest to the TIFIA JPO requesting a loan under rural set aside provisions, and while dialogue is ongoing, there is a risk that rural terms may

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not be made available. If this is the case, ODOT may still be able to receive a TIFIA loan at the full TIFIA rate (1 basis point higher than Treasury rates\(^5\)), twice the cost of the rural set aside interest rate. The risk that the project does not receive the rural set aside rate exists only in the PPP option, the PSC is not eligible to apply for TIFIA financing. The potential impact of this risk has been illustrated in Figure 1.6.

**Figure 1.6 – Impact of TIFIA rural interest rate being unavailable**

\[\text{Difference in Net Present Cost ($m) of PPP and PSC by discount rate if TIFIA not available at rural interest rate}\]

1.10.3. Figure 1.6 highlights that the availability of TIFIA is central to the PPP providing value to ODOT – if a TIFIA loan is not available at the rural interest rate but is instead available at the full Treasury rate, the PPP option will still provide a lower net present cost than the PSC at discount rates above 4.4%. However, in the absence of any other efficiency in pricing explored in the sensitivities above, the PSC will provide a lower cost to ODOT at discount rates lower than 4.4%. Extending this scenario, if a TIFI A loan is not available to the project in any form, the PSC will represent better value in all scenarios unless other pricing efficiencies can be generated in a PPP.

1.10.4. A further risk to the project exists around construction inflation. ODOT’s most likely construction inflation forecast has been applied in developing financial forecasts, but it is recognized that inflation forecasts are volatile and should construction inflation turn out to be lower than forecast, the relative benefit of accelerating construction

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\(^5\) In this analysis, a rural TIFIA rate of 1.42% has been assumed and a full TIFIA rate of 2.83% has been assumed.
using a PPP alternative would be reduced. A scenario has been prepared to test the comparative impact on the PPP and PSC options if construction inflation was to be 1.5% lower than ODOT’s forecast in each future year of construction, with the difference in net present costs illustrated in Figure 1.7 below.

**Figure 1.7 – Impact of lower construction inflation on difference in Net Present Cost of PPP and PSC**

1.10.5. Figure 1.7 indicates that although lowering construction inflation by 1.5% each year does make the PSC alternative slightly more attractive in relative terms, the PPP remains preferred at all discount rates above 3.55%.

1.11. **ODOT Decision Making**

1.11.1. Quantitative analysis at pre-procurement stage is inherently based upon assumptions and variables which will become more certain as the project develops. Based upon the analysis of comparative cost profiles, the anticipated net present cost of delivering Portsmouth Bypass under a PPP appears to offer better value to ODOT than traditional public sector delivery under a broad range of potential scenarios, even before consideration of the potential pricing efficiencies or benefits of competition that a PPP might generate.
1.11.2. The quantitative analysis also highlights the importance of a TIFIA loan in making a PPP financially attractive, particularly under the rural set aside provisions. It is recognized that there are a number of assumptions and risks underlying the financial forecasts for both the PSC and PPP delivery analysis which, if changed, may cause the PPP to no longer offer the lowest net present cost.

1.11.3. However, there are factors that support ODOT using Portsmouth Bypass as an opportunity to test the PPP authority provided by the legislature.\(^6\)

- The PPP allows acceleration of the project such that it will be completed at least eight years earlier than under the PSC. This also allows earlier realization of the safety and user benefits, reducing congestion more quickly and improving air quality, creating jobs more quickly in a region where unemployment exceeds the state and national average and serving as a catalyst for wider regional economic development.
- By accelerating delivery of the combined three phases of the Bypass as a PPP, ODOT can take advantage of competitive construction conditions, economies of scale, high market interest in the project and avoiding forecast construction escalation.
- The PPP requires almost half the level of public funding over the next 13 years of traditional delivery, allowing ODOT to advance other projects in its work program.
- The overall cost of the PPP is lower than traditional delivery under most scenarios.
- The PPP provides ODOT with the unique ability to spread payment for the project over a longer period than would otherwise be possible, offering the opportunity to access TIFIA borrowing at a low cost and long tenor with reduced impact on ODOT’s ability to deliver other projects in its work program. TIFIA is a competitive program outside normal formula funds, so its availability would be additive to ODOT. Portsmouth Bypass is likely to be the only project in ODOT’s current work program that would qualify for the enhanced rural provisions.
- The PPP offers ODOT price and schedule certainty over a 40 year period that the PSC does not, and transfers targeted risks to a private partner where they are better able to manage and mitigate these risks. While risk transfer may create a pricing premium, access to TIFIA would allow ODOT to achieve risk transfer at similar or lower costs of finance than ODOT can achieve in traditional procurements where high levels of risk are retained.

\(^6\) HB 114 of the 129th General Assembly and as permitted by ORC Sections 5501.70 through 5501.83
1.11.4. Given the quantitative analysis, which highlights that a PPP produces a more favorable net present cost than public delivery under most scenarios, the qualitative benefits provided by the PPP and its alignment with broader policy goals, there appears to be justification for ODOT to pursue a PPP as its preferred delivery alternative.
1.12. Potential Impacts of Reduced Project Scope

1.12.1. The possible inclusion of maintenance responsibility for the Scioto County network within the scope of a PPP project remains subject to further consideration and consultation by ODOT. This section considers the implications of reducing the scope of the Developer’s obligations under a PPP as shown below.

<table>
<thead>
<tr>
<th>Activity</th>
<th>Initial Scope</th>
<th>Reduced Scope</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating services and Routine Maintenance</td>
<td>Developer</td>
<td>Developer</td>
</tr>
<tr>
<td>Scioto County network*</td>
<td>ODOT</td>
<td>ODOT</td>
</tr>
<tr>
<td>Capital Maintenance</td>
<td>Developer</td>
<td>Developer</td>
</tr>
<tr>
<td>Scioto County network*</td>
<td>ODOT</td>
<td>ODOT</td>
</tr>
</tbody>
</table>

*Seventeen ODOT maintained US and State Routes in Scioto County illustrated in Figure 1.2

1.12.2. In the reduced scope outlined above, ODOT’s District 9 would undertake all operational and routine maintenance services for the Portsmouth Bypass and would continue to provide all operational, routine and capital maintenance for the surrounding Scioto County network.

1.12.3. In the reduced scope, planned capital maintenance for the Portsmouth Bypass would be undertaken by the Developer. Taking into consideration the traffic loading and assuming the Bypass is constructed in full compliance with design standards and construction specifications, planned capital maintenance for the Portsmouth Bypass would predominantly consist of paving and resurfacing works every eight to ten years as well as upgrades to bridge, drainage and retaining wall structures.

1.12.4. The impact of reducing the project scope is summarized in the table below:

<table>
<thead>
<tr>
<th>Case</th>
<th>NPC at 5% discount rate</th>
<th>NPC at 3.9% discount rate</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>PPP</td>
<td>PSC</td>
</tr>
<tr>
<td>(10) Reduced project scope – construction of</td>
<td>$395m</td>
<td>$433m</td>
</tr>
<tr>
<td>Bypass and Bypass capital maintenance only</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
1.12.5. The chart below illustrates the annual cost to ODOT of the reduced scope under the PPP and PSC delivery alternatives. Based on the assumptions provided regarding changes in maintenance scope and costs, the quantitative comparison between PPP and a Public Sector Comparator remains relatively unchanged, with a PPP continuing to show value.

**Figure 1.8 - Comparison of ODOT cash payments under PPP and PSC for reduced scope project**

![Graph showing PPP vs PSC comparison](image)

1.12.6. If a deliverable reduced scope can be achieved, the PPP alternative still offers a number of benefits over the PSC:

- Accelerates delivery of the project and its benefits by 8 years,
- Defers project payments (except funds already on hand) until after completion,
- Frees up budget capacity in the near term to deliver other projects and pays for the project over 40 years, and
- Provides firm-fixed pricing.

1.12.7. However, the reduction in project scope creates significant challenges to successful delivery as a PPP and ODOT’s ability to realize the expected risk transfer:

- *Limited economies of scale* - Excluding routine maintenance for the Bypass and routine and capital maintenance for the Scioto County network leaves a very small maintenance component within the concession, potentially making it difficult to generate pricing efficiencies. It is unclear the level of market interest in a project with such limited maintenance scope.
• **Challenges to achieving effective risk transfer** - The PPP developer would be responsible for construction and capital maintenance on the Bypass but not routine maintenance. This could reduce ODOT’s ability to effectively achieve transfer of key performance risks, and enforce non-performance through the deductions regime due to the interface created between capital and routine maintenance responsibility. A private partner will not be held to the risk of repairing latent defects in the work if it is not clear that the cause of the defect was poor design and construction rather than inadequate routine maintenance by ODOT.

• **Loss of opportunity to stimulate competition in the region** - The larger project scope presents greater opportunity to generate competition in the paving market by encouraging an increased number of potential paving suppliers, and possibly more competitive pricing from the existing operations.

• **ODOT responsibility for impact of construction traffic on the local road network** – The construction of the Portsmouth Bypass will result in increased traffic on the local road network in Scioto County particularly those roads in the vicinity of the Bypass. Many of these road surfaces and structures may not be suitable for this level of traffic and the nature of the vehicles involved. Under a reduced scope of maintenance it will be the responsibility of ODOT to maintain these roads throughout the construction period which will add additional burden on ODOT. Responsibility for the maintenance of these roads would be better transferred to the Developer.

1.12.8. Limiting the project scope to a PPP which includes design, construction, financing and capital maintenance of Portsmouth Bypass only represents one of a spectrum of scope options. Alternatives for the project as an availability payment PPP may also include:

i) Portsmouth Bypass plus capital maintenance for the Bypass and 17 route Scioto County network,

ii) Portsmouth Bypass plus capital maintenance for the Bypass and five US and State routes within the immediate vicinity of the Bypass


In addition, it may be possible for ODOT to retain all routine maintenance except that which directly impacts the capital condition or creates enforceability issues under the contract. The deliverability and market interest in alternatives with reduced scope should be subject to further consultation.