
South Cooper Mountain

Infrastructure Funding Plan

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City of Beaverton

Preliminary Draft Report

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ECONorthwest specializes in economics, planning, and finance. Established in 1974, ECONorthwest has four decades of experience helping clients make sound decisions based on rigorous economic, planning and financial analysis.

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1 Introduction

This memorandum describes a plan and strategy for how infrastructure in the South Cooper Mountain area could be funded. This analysis is driven, in part, by Metro Title 11 Functional Plan requirements that state, for areas added to the Urban Growth Boundary, that “Comprehensive plan provisions for the area shall include... provision for the financing of local and state public facilities and services.” Areas within Urban Reserves are required by Title 11 to provide more generalized information in concept plans, including: “...Preliminary estimates of the costs of the systems and facilities in sufficient detail to determine feasibility and allow comparisons to other areas; and... Proposed methods to finance systems and facilities.”

In addition to meeting these regulatory requirements, the analysis is intended to serve several practical purposes. First, it fulfills the projects guiding principle to “Prepare a realistic financing plan for infrastructure and feasible implementation strategies.” This is consistent with the City’s Capital Improvement Program (CIP), which identifies geographic priority areas for infrastructure investment. One of those priorities is to “Plan and prepare infrastructure and infrastructure financing for South Cooper Mountain/6B area development.”

The analysis also informed selection of the final preferred land use and transportation scenarios, and is intended to increase developer and property owner confidence in the process by addressing financing and implementation strategies early on. This document is a revised version of the “Early Funding Analysis” completed in March 2014. The document has been updated to reflect refined development scenarios and infrastructure costs, and to address feedback provided by the South Cooper Mountain Finance Task Force.

This memorandum is organized in three main sections:

- **Methods** describes the steps that were taken to conduct the analysis.
- **Funding plan** identifies the key conclusions of the analysis, organized by type of infrastructure.
- **Implications** summarizes the important implications of the analysis.

2 Methods

This Infrastructure Funding Plan was created through a collaborative process, involving the consultant team, City staff, representatives of local and regional governments and service providers responsible for building and maintaining infrastructure in the South Cooper Mountain area, and private property owners and developers. The process was both technical (identifying what infrastructure improvements are needed and how much they would cost), and political (discussing who should pay and how much). Although this was an iterative process, the methods generally followed the following steps:

- **Land use scenarios.** Multiple scenarios were developed to show what potential development in South Cooper Mountain might look like, including what types of development would occur where at what densities.
- **Infrastructure analysis.** The land use scenarios were evaluated to determine all the infrastructure that would be necessary to accommodate the projected new development. This resulted in a list of specific infrastructure projects with cost estimates for each project.
- **Basic revenue estimates.** For “basic” sources of revenue (i.e., fundamental revenue sources assumed to be available for South Cooper Mountain infrastructure, like Systems Development Charges (SDCs), and Transportation Development Tax (TDT)) we estimated the amount of revenue that would be generated at full build-out of the land use scenarios.
- **Consultation with public and private partners.** A series of interviews were conducted with private developers and public infrastructure providers to understand their perspectives on who should pay for infrastructure, through what sources, and what amounts. Additionally, a Finance Task Force was convened to bring these various public and private parties together to discuss these issues. Meetings were held with Washington County to discuss issues and options for funding transportation facilities.
- **Early Funding Analysis.** An Early Funding Analysis was completed, showing total project costs and projected allocation of basic funding sources for each type of infrastructure. In situations where basic funding sources were projected to be insufficient to cover the total project costs, funding gaps were identified.
- **Infrastructure Funding Plan.** Following the Early Funding Analysis, the final land use scenario was determined, and infrastructure project cost estimates were refined. The Early Funding Analysis was updated to reflect a different allocation of resources for each infrastructure project to eliminate the funding gap.

This analysis was conducted for each of the three constituent subareas of South Cooper Mountain: the South Cooper Mountain Annexation Area (SCMAA), North Cooper Mountain (NCM), and the Urban Reserve Area (URA). One caveat when reading this report: all dollar amounts stated in this report are in constant 2014 dollars, and have not been adjusted for inflation.

3 Funding Plan

3.1 Parks

Overall strategy

Tualatin Hills Parks and Recreation District (THPRD) is responsible for providing park infrastructure in South Cooper Mountain. Representatives of THPRD stated that Systems Development Charges (SDCs) are the only funding source that can be counted on for park projects in South Cooper Mountain. Any funding from grants and general obligation bonds would be speculative.

The amount of the THPRD SDC varies depending on the type of development. The following rates were used to forecast SDC revenue generated by development in South Cooper mountain: \$5,524 per single-family home, \$4,131 per unit of multifamily residential, and \$143 per employee for commercial development, as determined by THPRD's employee formula.¹

SCMAA funding plan

Exhibit 1 shows the funding plan for parks in the SCMAA. Total project costs are estimated to be \$9,012,000, and 100% of these costs would be funded by SDCs. Note that land acquisition is a significant component of the cost of parks projects, and the ultimate cost of these projects may differ from the projections shown in Exhibits 1 – 3, if land values in the area change before THPRD purchases their sites for future park development. Development in the SCMAA is forecast to generate \$15,443,721 in parks SDCs, which is more than what is needed for parks projects in the area. However, new development is expected to generate more SDCs than what is needed for the immediate geographic area, as they fund other facilities throughout the district.

Exhibit 1. SCMAA parks infrastructure funding plan

Project Type	Cost	Funding Sources	
		SDC	Developer
Community Parks	\$ -	\$ -	\$ -
Neighborhood Parks	\$ 8,500,000	\$ 8,500,000	\$ -
Trails	\$ 512,000	\$ 512,000	\$ -
Total Costs	\$ 9,012,000	\$ 9,012,000	\$ -
SDC Revenues		\$ 15,443,721	
SDC Surplus (Deficit)		\$ 6,431,721	

Source: Angelo Planning Group. Park Acreages and Costs – updated 052714.xlsx. From Becky Hewitt. May 27, 2013.

¹ City of Beaverton, "System Development Fees (SDC)." Revised February 2014.

UR funding plan

Exhibit 2 shows the funding plan for parks in the UR. Total project costs are estimated to be \$28,520,000. THPRD could consider purchasing land in the UR before the area is brought into the UGB. This strategy may help prevent cost increases due to future increases in land values. Although SDCs are the only funding source identified for parks projects in the UR, SDCs generated within the UR are projected to be only \$19,373,886, which would be insufficient to pay for the cost of these park projects. This is because a neighborhood park is planned to be located in the UR. The community park would be intended to serve residents from all of South Cooper Mountain as well as the surrounding neighborhoods. Thus, Exhibit 2 shows a parks SDC funding gap of \$10,704,473 for the UR.

The first logical source of funding to fill this gap would be surplus parks SDC revenues from elsewhere on South Cooper Mountain. Both the SCMAA and NCM are estimated to generate surplus parks SDC revenues totaling \$7,990,080. Even with these SDCs, there remains a gap of \$2,714,393. If capital costs for parks facilities in the area cannot be reduced, then it may be necessary for an additional funding source to be used in the future. The potential need for additional revenues is also driven by the fact that SDCs generated in the area should actually exceed the total project costs in the area, as these SDCs are also intended to contribute to district-wide facilities like an aquatic center.

One potential strategy for reducing the cost of parks infrastructure in the area is for THPRD to collaborate with the school district on shared park facilities. THPRD has noted that they have begun exploring park and recreation facilities in conjunction with the proposed new high school; this may influence the size and location of a future community park elsewhere on South Cooper Mountain.

Exhibit 2. UR parks infrastructure funding plan

Project Type	Cost	Funding Sources	
		SDC	Developer
Community Parks	\$ 20,700,000	\$ 20,700,000	\$ -
Neighborhood Parks	\$ 6,800,000	\$ 6,800,000	\$ -
Trails	\$ 1,020,000	\$ 1,020,000	\$ -
Total Costs	\$ 28,520,000	\$ 28,520,000	\$ -
SDC Revenues		\$ 17,815,527	
SDC Surplus (Deficit)		\$ (10,704,473)	

Source: Angelo Planning Group. Park Acreages and Costs – updated 052714.xlsx. From Becky Hewitt. May 27, 2013.

NCM funding plan

Exhibit 3 shows the funding plan for parks in NCM. There are no planned park projects in NCM. Development in NCM is forecast to generate \$1,558,359 in parks SDCs, which would potentially be available to contribute to the cost of park facilities elsewhere on South Cooper Mountain.

Exhibit 3. NCM parks infrastructure funding plan

Project Type	Cost	Funding Sources	
		SDC	Developer
Community Parks	\$ -	\$ -	\$ -
Neighborhood Parks	\$ -	\$ -	\$ -
Trails	\$ -	\$ -	\$ -
Total Costs	\$ -	\$ -	\$ -
SDC Revenues		\$ 1,558,359	
SDC Surplus (Deficit)		\$ 1,558,359	

Source: Angelo Planning Group. Park Acreages and Costs – updated 052714.xlsx. From Becky Hewitt. May 27, 2013.

3.2 Water

Overall strategy

The City of Beaverton would be responsible for providing water service to the SCMAA and any areas within the Urban Reserve that are annexed to the City. The Tualatin Valley Water District currently provides water to the North Cooper Mountain area. For any new extensions with the TVWD district, the funding strategy assumes those are paid for by developing properties.

The City levies an SDC on new development to pay for the “public” share of water infrastructure costs. Private developers are also responsible for funding the “private” share of water infrastructure costs. Water infrastructure in South Cooper Mountain would be covered by these two sources. The public-private split of costs is determined by the demand from new development. For our analysis, we assume pipes 12” or less in diameter are the responsibility of private developers. Pipes larger than 12” in diameter are paid for jointly between the public and private sector. The costs are divided proportionately based on the diameter of the pipe, with the public sector paying for the portion of the cost of pipe larger than 12” in diameter. Although the proportionality of funding for pipes does not have a hard break at 12” diameter, input from the City and TVWD indicated this was a good rule-of-thumb assumption to use for the purposes of this analysis.

The water SDC rate, effective February 1st, 2014, varies depending on the size of the water meter, ranging from \$5,293 for a 5/8-inch meter, up to \$30,497 for a 1.5-inch meter.²

² City of Beaverton. “Exhibit 2 – Current Water SDCs and Revised.” From Barnett, Brion, Project Engineer, Public Works Department. December 3, 2013.

SCMAA funding plan

Exhibit 4 shows the funding plan for water infrastructure in the SCMAA. Total project costs are estimated to be \$9,146,924. Developers would be expected to pay for \$5,727,198 of these costs. SDCs would pay for the public share of costs, \$3,419,726. Development in the SCMAA is forecast to generate \$18,133,818 in water SDCs, which is more than what is needed for water infrastructure projects in the area. This is expected, as the cost of distribution pipes is typically a fraction of the total cost of facilities needed to serve an area, and new development is expected to generate more SDCs than what is needed for the immediate geographic area, as they fund other regional facilities throughout the district, like upsizing lines and building more storage capacity. The City’s CIP specifically identifies a new reservoir on South Cooper Mountain as the City’s sole focus for water storage capital projects. This proposed new reservoir would bolster the capacity provided by the existing Cooper Mountain Reservoir No. 1, and would provide service to future residents of South Cooper Mountain, as well as other residents of the City’s upper elevation service areas.

Exhibit 4. SCMAA water infrastructure funding plan

Project Type	Cost	Funding Sources	
		SDC	Developer
12" Pipe	\$ 1,678,019	\$ -	\$ 1,678,019
16" Pipe	\$ 1,258,905	\$ 314,726	\$ 944,179
20" Pipe	\$ -	\$ -	\$ -
24" Pipe	\$ 6,210,000	\$ 3,105,000	\$ 3,105,000
Total Costs	\$ 9,146,924	\$ 3,419,726	\$ 5,727,198
SDC Revenues		\$ 18,133,818	
SDC Surplus (Deficit)		\$ 14,714,092	

Source: David Evans and Associates, Inc. memorandum on “Water System Concept Plan – Summary Findings and Planning Level Cost Estimates.” From Steven Harrison. To South Cooper Mountain Technical Advisory Committee. May 7, 2014.

UR funding plan

Exhibit 5 shows the funding plan for water infrastructure in the UR. Total project costs are estimated to be \$10,409,625. The privately-funded share of these costs are estimated to be \$7,234,344. The public-share of these costs, covered by SDCs, are estimated to be \$3,175,281. Development in the UR is forecast to generate \$19,917,559 in water SDCs, which is substantially more than what is needed for water infrastructure projects in the area.

Exhibit 5. UR water infrastructure funding plan

Project Type	Cost	Funding Sources	
		SDC	Developer
12" Pipe	\$ 1,792,500	\$ -	\$ 1,792,500
16" Pipe	\$ 3,037,125	\$ 759,281	\$ 2,277,844
20" Pipe	\$ 3,740,000	\$ 1,496,000	\$ 2,244,000
24" Pipe	\$ 1,840,000	\$ 920,000	\$ 920,000
Total Costs	\$ 10,409,625	\$ 3,175,281	\$ 7,234,344
SDC Revenues		\$ 19,917,559	
SDC Surplus (Deficit)		\$ 16,742,278	

Source: David Evans and Associates, Inc. memorandum on "Water System Concept Plan – Summary Findings and Planning Level Cost Estimates." From Steven Harrison. To South Cooper Mountain Technical Advisory Committee. May 7, 2014.

NCM funding plan

Exhibit 6 shows the funding plan for water infrastructure in NCM. Total project costs are estimated to be \$2,093,547. The privately-funded share of these costs are estimated to be \$1,570,160. The public-share of these costs, covered by SDCs, are estimated to be \$523,387. Development in NCM is forecast to generate \$1,572,021, in water SDCs, which is substantially more than what is needed for water infrastructure projects in the area.

Exhibit 6. NCM water infrastructure funding plan

Project Type	Cost	Funding Sources	
		SDC	Developer
12" Pipe	\$ -	\$ -	\$ -
16" Pipe	\$ 2,093,547	\$ 523,387	\$ 1,570,160
20" Pipe	\$ -	\$ -	\$ -
24" Pipe	\$ -	\$ -	\$ -
Total Costs	\$ 2,093,547	\$ 523,387	\$ 1,570,160
SDC Revenues		\$ 1,572,021	
SDC Surplus (Deficit)		\$ 1,048,634	

Source: David Evans and Associates, Inc. memorandum on "Water System Concept Plan – Summary Findings and Planning Level Cost Estimates." From Steven Harrison. To South Cooper Mountain Technical Advisory Committee. May 7, 2014.

3.3 Sanitary Sewer

Overall strategy

Clean Water Services (CWS) would be responsible for providing sanitary sewer infrastructure for South Cooper Mountain. The City of Beaverton collects an SDC on new development to pay for the public portion of sanitary sewer infrastructure. Ninety-six percent of this SDC is passed through to CWS. Private developers are also responsible for paying for a portion of sanitary sewer infrastructure, including all pipes 12-inches or less in diameter, and a portion of all pipes larger than 12-inches.

SCMAA funding plan

Exhibit 7 shows the funding plan for sanitary sewer infrastructure in the SCMAA. Total project costs are estimated to be \$13,942,169. Developers would be expected to pay for \$10,825,168 of these costs. SDCs would pay for the public share of costs, \$3,117,001. Development in the SCMAA is forecast to generate \$16,444,800 in sanitary sewer SDCs (\$15,787,008 for CWS and \$657,792 for the City), which is more than what is needed for water infrastructure projects in the area. However, new development is expected to generate more SDCs than what is needed for the immediate geographic area, as they fund other regional facilities throughout the district

Exhibit 7. SCMAA sanitary sewer infrastructure funding plan

Project Type	Cost	Funding Sources	
		SDC	Developer
Gravity Sewer Lines			
8" Pipe	\$ 5,082,405	\$ -	\$ 5,082,405
12" Pipe	\$ 4,553,040	\$ -	\$ 4,553,040
15" Pipe	\$ 1,487,154	\$ 297,431	\$ 1,189,723
Pump Stations			
Tile Flat Road	\$ -	\$ -	\$ -
River Terrace	\$ 2,819,570	\$ 2,819,570	\$ -
Total Costs	\$ 13,942,169	\$ 3,117,001	\$ 10,825,168
SDC Revenues		\$ 16,444,800	
SDC Surplus (Deficit)		\$ 13,327,799	

Source: David Evans and Associates, Inc. memorandum on "Sanitary Sewer Concept Plan – Summary Findings and Planning Level Cost Estimates." From Steven Harrison. To South Cooper Mountain Technical Advisory Committee. May 7, 2014.

UR funding plan

Exhibit 8 shows the funding plan for sanitary sewer infrastructure in the UR. Total project costs are estimated to be \$21,037,775. The privately-funded share of these costs are estimated to be \$19,521,920. Private developers would pay for the bulk of the project costs, because most of the project costs are for 8-inch diameter gravity sewer lines. The public-share of these costs, covered by SDCs, are estimated to be \$1,515,855. Development in the UR is forecast to generate \$17,170,545 in sanitary sewer SDCs (\$16,483,723 for CWS and \$686,822 for the City), which is substantially more than what is needed for sanitary sewer infrastructure projects in the area.

Exhibit 8. UR sanitary sewer infrastructure funding plan

Project Type	Cost	Funding Sources	
		SDC	Developer
Gravity Sewer Lines			
8" Pipe	\$ 15,573,615	\$ -	\$ 15,573,615
12" Pipe	\$ 3,496,884	\$ -	\$ 3,496,884
15" Pipe	\$ 564,276	\$ 112,855	\$ 451,421
Pump Stations			
Tile Flat Road	\$ 1,403,000	\$ 1,403,000	\$ -
River Terrace (Phase 2)	\$ -	\$ -	\$ -
Total Costs	\$ 21,037,775	\$ 1,515,855	\$ 19,521,920
SDC Revenues		\$ 18,686,400	
SDC Surplus (Deficit)		\$ 17,170,545	

Source: David Evans and Associates, Inc. memorandum on "Sanitary Sewer Concept Plan – Summary Findings and Planning Level Cost Estimates." From Steven Harrison. To South Cooper Mountain Technical Advisory Committee. May 7, 2014.

NCM funding plan

Exhibit 9 shows the funding plan for sanitary sewer infrastructure in NCM. Total project costs are estimated to be \$9,967,695. One hundred percent of these costs would be privately funded, as they are all for 8" gravity sewer lines. Development in the NCM is forecast to generate \$2,505,600 in sanitary sewer SDCs (\$2,405,376 for CWS and \$100,224 for the City), which would not be needed for sanitary sewer infrastructure projects in the area.

Exhibit 9. NCM sanitary sewer infrastructure funding plan

Project Type	Cost	Funding Sources	
		SDC	Developer
Gravity Sewer Lines			
8" Pipe	\$ 9,967,695	\$ -	\$ 9,967,695
12" Pipe	\$ -	\$ -	\$ -
15" Pipe	\$ -	\$ -	\$ -
Pump Stations			
Tile Flat Road	\$ -	\$ -	\$ -
River Terrace (Phase 2)	\$ -	\$ -	\$ -
Total Costs	\$ 9,967,695	\$ -	\$ 9,967,695
SDC Revenues		\$ 2,505,600	
SDC Surplus (Deficit)		\$ 2,505,600	

Source: David Evans and Associates, Inc. memorandum on "Sanitary Sewer Concept Plan – Summary Findings and Planning Level Cost Estimates." From Steven Harrison. To South Cooper Mountain Technical Advisory Committee. May 7, 2014.

3.4 Stormwater

Overall strategy

Unlike parks, water, and sanitary sewer, the costs for stormwater infrastructure is not typically covered by an SDC. Traditionally, detention facilities have been the responsibility of private developers, with individual developers building detention facilities onsite that are sufficient to manage the stormwater generated on that individual property. Under the traditional model, the cost of stormwater detention facilities would be excluded from a funding analysis like this.

Based on preliminary stormwater planning, CWS and the City of Beaverton have identified the use of regional stormwater facilities as the preferred approach for South Cooper Mountain. Regional facilities can offer several benefits compared to traditional onsite detention facilities in regards to meeting natural resource objectives. Regional facilities can create wildlife and aquatic life habitat, and be integrated into a network of green spaces that provide recreational opportunities in addition to stormwater drainage.

Due to the challenges associated with regional facilities (see discussion below), more traditional site-scale facilities may be used in place of, or in combination with, regional facilities. Our funding analysis assumes a regional stormwater facility approach is used, in which large-scale dry detention ponds are used to manage stormwater for the surrounding areas, which could include multiple private property owners. These facilities would be funded using either a new Regional Facility Fee (RFF), or a private reimbursement district.

The concept of a regional facility fee is relatively new, and is currently being used in only one other location in the Portland region, North Bethany. CWS adopted a Regional Stormwater Management Charge for North Bethany. The methodology applied to North Bethany, could also be applied to South Cooper Mountain to fund stormwater infrastructure. This methodology is based on the total capital cost of all regional stormwater facilities in the area, and the total stormwater treatment volume that would be handled by these facilities. Note that stormwater conveyance facilities are excluded from this cost estimate, and are assumed to be the responsibility of private developers. The regional stormwater management charge is also adjusted annually for inflation of previous project costs, to compensate CWS for the time value of money.

In a nutshell, the regional stormwater management charge for North Bethany determines the volume of stormwater that a specific development would contribute to the system as a percentage of the total stormwater capacity of the system, and assesses that development a proportional share of the regional stormwater facility system costs. Because this method is based on the actual costs incurred, the calculation balances itself out, so that development should always pay for itself. If a similar approach were to be adopted for South Cooper Mountain, further analysis would be required to estimate the magnitude of the new regional facility fee on a per household basis.

It is worth noting that the regional stormwater management approach is not without challenges. Several private developers on the Finance Task Force voiced concerns about the regional stormwater management approach based on their experiences with North Bethany. These concerns include:

- **Coordination among property owners.** If one property owner is ready to develop, but has to cross through other properties to connect to the regional stormwater retention pond, and if those property owners are not ready to develop, then it can cause costly development delays.
- **Prevailing wage.** Because the regional facilities are publicly funded, they must be constructed using “prevailing wage rates,” which typically results in a cost-premium compared to privately-funded projects. This can increase project costs 30% or more.
- **Upfront funding.** These shared facilities need to be in place prior to the surrounding development. That means that someone needs to provide upfront funding, to be reimbursed by subsequent development. In North Bethany, CWS provided \$1 million of seed money to jump start the first regional stormwater facility, but no such seed money has been identified for South Cooper Mountain.
- **Size and location.** While regional facilities may require fewer acres overall, compared to the traditional site-specific approach, the large-scale facilities do require large, consolidated areas of land. This land is then unavailable for private development. With the traditional approach, stormwater facilities could be small, and tucked away on otherwise unusable portions of a site.

SCMAA funding plan

Exhibit 10 shows the funding plan for stormwater infrastructure in the SCMAA. Total project costs are estimated to be \$14,432,400. These costs would be funded either through a new RFF or directly by private developers using a reimbursement district, or through a combination of both approaches.

Exhibit 10. SCMAA stormwater infrastructure funding plan

Project Type	Cost	Funding Sources	
		SDC	RFF or Developer
Detention Facilities	\$ 7,952,300	\$ -	\$ 7,952,300
Conveyance Facilities	\$ 6,480,100	\$ -	\$ 6,480,100
Total Costs	\$ 14,432,400	\$ -	\$ 14,432,400
SDC Revenues		\$ -	
SDC Surplus (Deficit)		\$ -	

Source: David Evans and Associates, Inc. memorandum on "Stormwater and Water Quality Scenario Summary." From Claudia Sterling. To South Cooper Mountain Beaverton Core Project Team. November 5, 2013 (draft).

Note: Detention facilities cost estimates do not include the cost of land acquisition.

UR funding plan

Exhibit 11 shows the funding plan for stormwater infrastructure in the UR. Total project costs are estimated to be \$17,213,100, with all funding estimated to come from a new RFF, or direct developer funding, or a combination of both.

Exhibit 11. UR stormwater infrastructure funding plan

Project Type	Cost	Funding Sources	
		SDC	RFF or Developer
Detention Facilities	\$ 9,739,100	\$ -	\$ 9,739,100
Conveyance Facilities	\$ 7,474,000	\$ -	\$ 7,474,000
Total Costs	\$ 17,213,100	\$ -	\$ 17,213,100
SDC Revenues		\$ -	
SDC Surplus (Deficit)		\$ -	

Source: David Evans and Associates, Inc. memorandum on "Stormwater and Water Quality Scenario Summary." From Claudia Sterling. To South Cooper Mountain Beaverton Core Project Team. November 5, 2013 (draft).

Note: Detention facilities cost estimates do not include the cost of land acquisition.

NCM funding plan

Exhibit 12 shows the funding plan for stormwater infrastructure in NCM. Total project costs are estimated to be \$4,336,500, with all funding estimated to come from a new RFF, or direct developer funding, or a combination of both.

Exhibit 12. NCM stormwater infrastructure funding plan

Project Type	Cost	Funding Sources	
		SDC	RFF or Developer
Detention Facilities	\$ 1,330,400	\$ -	\$ 1,330,400
Conveyance Facilities	\$ 3,006,100	\$ -	\$ 3,006,100
Total Costs	\$ 4,336,500	\$ -	\$ 4,336,500
SDC Revenues		\$ -	
SDC Surplus (Deficit)		\$ -	

Source: David Evans and Associates, Inc. memorandum on "Stormwater and Water Quality Scenario Summary." From Claudia Sterling. To South Cooper Mountain Beaverton Core Project Team. November 5, 2013 (draft).
Note: Detention facilities cost estimates do not include the cost of land acquisition.

3.5 Transportation

Overall strategy

Transportation infrastructure in the South Cooper Mountain area will largely be the responsibility of the County (and to a lesser extent, the City) to build and maintain. Thus, County and City representatives were interviewed and invited to participate in the Finance Task Force. Existing sources of funding for these types of City and County transportation infrastructure projects are essentially limited to developer funding, the Transportation Development Tax (TDT) and the Major Streets Transportation Improvement Program (MSTIP).

The existing rates for TDT vary based on use. Townhomes pay \$4,919 for TDT, apartments pay \$5,381, and single-family detached homes pay \$8,225. Commercial uses vary greatly based on the type of business. Some of the likely types of commercial development in South Cooper Mountain include shopping centers, and general office uses, which pay \$11,293 and \$8,632 respectively in TDT for every 1,000 SF. MSTIP is an annual property tax rate, as opposed to a one-time fee at the time of development. The property tax rate amounts to \$0.6520 per \$1,000 of assessed value.

Based on input from the Finance Task Force and other key stakeholders, it was determined that these funding sources would also need to provide the bulk of the funding for the public share of transportation costs in South Cooper Mountain. However, these funding sources would be insufficient, requiring an additional funding mechanism, like a new site-specific SDC. Additionally, a sizable portion of project costs would be the responsibility of the private sector to fund directly. The Finance Task Force also directed the team to look not only at project costs versus revenues, but also what types of funds are appropriate for specific projects. This is particularly true for use of MSTIP funds, which are limited, in high demand, and must be applied to roads of countywide significance.

For the purposes of this analysis, we assumed that roughly 75% of the TDT generated by new development in each subarea would be used to pay for projects in that subarea. Additionally, we assumed that a new transportation SDC of \$5,000 per housing unit would be applied to the area, and that 100% of the SDC funds generated in each subarea would be used to pay for projects in that subarea.³

Note that the inclusion of MSTIP revenue in this funding strategy does not in any way guarantee that those funds would be available for these projects. MSTIP is a discretionary allocation of the County general fund. As such, it is subject to the policy direction of future Boards of County Commissioners, including the potential of being used for non-transportation purposes. Under current direction, adding South Cooper Mountain transportation projects to the MSTIP list will require the recommendation of the Washington County Coordinating Committee (WCCC) and Board of County Commissioners in the next MSTIP allocation process, scheduled to be in FYE 2017. Despite the inherent uncertainty of long-term MSTIP funding for any specific project, many projects in South Cooper Mountain appear to be a good fit for MSTIP funding, given their importance to regional traffic patterns. Thus, this funding strategy assumes that multiple projects will receive MSTIP funding. These projects were specifically identified by members of the Finance Task Force, based on their importance to the region.

SCMAA funding plan

Exhibit 13 shows the funding plan for transportation infrastructure in the SCMAA. Total project costs are estimated to be \$62,115,000.⁴ Developers would be expected to directly pay for \$16,935,500 of these costs. TDT, MSTIP, and a new SDC would pay for the public share of costs, \$45,179,500. Note that although TDT and SDC are listed as funding sources, many projects will actually be built and paid for entirely by private developers with those developers earning TDT and SDC credits from the City. Those credits would likely be transferrable throughout all of South Cooper Mountain.

Although this credit-based approach to infrastructure finance works well in most situation, there are potentially serious timing issues that can arise. For example, if a property owner is not yet ready to develop, but a road is needed through their property to serve developments on either side of it, the City and adjacent developers will need to find a way to finance construction of that road. Similarly, if there are certain transportation projects planned for a given property that serve the larger area and are very expensive relative to the value of development that will

³ Although this analysis assumes a supplemental transportation SDC of \$5,000 per housing unit, the actual SDC rate may differ, and would need to be determined through further analysis and negotiation between the City and private developers and property owners. Furthermore, the SDC rate would likely vary for different types of development (e.g., residential versus commercial) and different housing types (e.g., single-family detached homes versus multifamily apartments). For the purposes of our analysis, we have simply shown an average SDC rate across all types of residential development.

⁴ Cost estimates for all transportation projects include cost of right-of-way acquisition, which was assumed to be between \$9 and \$14 per square foot.

occur on that property, then the property owner may be unable or unwilling to pay for the full cost of the project upfront in exchange for TDT and SDC credits that may not be able to be redeemed until years later.

Due to these timing issues, it will be important for the City (or County or some other public entity) to have sufficient resources on hand to fill these funding gaps if and when they arise. One potential strategy would be to create a county service district, resulting in an increased property tax rate for property owners in South Cooper Mountain. Such a funding mechanism would be in addition to the funding sources included in this analysis.

Development in the SCMAA is forecast to generate \$21,064,428 in TDT, roughly 79% of which is anticipated to be needed for transportation infrastructure projects in the area, with the remainder assumed to be used for infrastructure projects elsewhere in Washington County.⁵ The new transportation SDC for the area would generate \$15,417,000 in the SCMAA. The funding plan shows that virtually all of these proposed supplemental SDC revenues (\$15,091,000) would be needed to fund projects in the subarea. Allocations of TDT and MSTIP funds are discretionary, and subject to approval by Washington County and the City of Beaverton. Attachment A to this report shows a more detailed breakdown of the SCMAA transportation infrastructure funding plan, including the amount of funding from each source for each specific project.

Exhibit 13. SCMAA transportation infrastructure funding plan

Timing	Cost	Funding Sources				
		TDT	New SDC	MSTIP	Developer	Other
Years 0-10	\$ 48,150,000	\$ 13,104,250	\$ 11,625,000	\$ 10,798,250	\$ 12,622,500	\$ -
Years 10-20	\$ 12,135,000	\$ 2,551,000	\$ 2,551,000	\$ 2,420,000	\$ 4,313,000	\$ 300,000
Years 20+	\$ 1,830,000	\$ 915,000	\$ 915,000	\$ -	\$ -	\$ -
Total Costs	\$ 62,115,000	\$ 16,570,250	\$ 15,091,000	\$ 13,218,250	\$ 16,935,500	\$ 300,000
TDT / SDC Revenues		\$ 21,064,428	\$ 15,417,000			
TDT / SDC Surplus (Deficit)		\$ 4,494,178	\$ 326,000			

Source: DKS memorandum on “Transportation Findings for Preferred Scenario.” From Carl Springer, Kevin Chewuk. To South Cooper Mountain Technical Advisory Committee. June 23, 2014.

Note that “other” funding in Years 10–20 is assumed to come from THPRD and Metro grants for a trail improvement project.

The funding plan for the SCMAA has a slim cushion, should project costs exceed current estimates. These cost estimates do include \$1,000,000 in contingency for street extensions. There is roughly \$4.5 million in TDT revenues generated in the subarea that are not expected to be spent in the subarea, but the existing funding plan already exceeds the proposed policy of only investing 75% of TDT generated in the area back into the area. Virtually all new SDC revenues that would be generated in the subarea, have been allocated to project costs in this subarea.

⁵ For all forecasts of TDT and new transportation SDC revenue, we assume 10% under-build for private development.

Note that the bulk of the spending for the SCMAA is anticipated to occur during years 0-10. If private development occurs over a longer period of time, then funding may not be available for all of these short-term projects, which may cause the timeline for some capital projects to be delayed until funding is available.

UR funding plan

Exhibit 14 shows the funding plan for transportation infrastructure in the UR. Total project costs are estimated to be \$47,850,000. The share of these costs paid directly by developers is estimated to be \$4,732,500. The public-share of these costs, covered by TDT, a new SDC, and MSTIP is estimated to be \$43,117,500. Development in the UR area is forecast to generate \$23,668,246 in TDT, 60% of which is anticipated to be needed for transportation infrastructure projects in the area, with the remainder assumed to be used for infrastructure projects elsewhere in Washington County. The new transportation SDC is anticipated to generate \$16,933,500 in the UR, 84% of which is anticipated to be spent on transportation projects in the UR. Given the surplus TDT and new SDC revenues projected for the UR, this subarea appears to have a modest cushion, should project costs exceed current estimates.

Exhibit 14. UR transportation infrastructure funding plan

Timing	Cost	Funding Sources			
		TDT	New SDC	MSTIP	Developer
Years 0-10	\$ 650,000	\$ 325,000	\$ 325,000	\$ -	\$ -
Years 10-20	\$ 31,975,000	\$ 10,997,500	\$ 10,997,500	\$ 9,980,000	\$ -
Years 20+	\$ 15,225,000	\$ 2,942,250	\$ 2,942,250	\$ 4,608,000	\$ 4,732,500
Total Costs	\$ 47,850,000	\$ 14,264,750	\$ 14,264,750	\$ 14,588,000	\$ 4,732,500
TDT / SDC Revenues		\$ 23,668,246	\$ 16,933,500		
TDT / SDC Surplus (Deficit)		\$ 9,403,496	\$ 2,668,750		

Source: DKS memorandum on "Transportation Findings for Preferred Scenario." From Carl Springer, Kevin Chewuk. To South Cooper Mountain Technical Advisory Committee. June 23, 2014.

NCM funding plan

Exhibit 15 shows the funding plan for transportation infrastructure in NCM. Total project costs are estimated to be \$2,475,000. Development in NCM is forecast to generate \$2,200,405 in TDT, 56% of which is anticipated to be needed for transportation infrastructure projects in the area, with the remainder assumed to be used for infrastructure projects elsewhere in Washington County. The new transportation SDC is anticipated to generate \$1,336,500 in NCM, 93% of which is shown to be needed for projects in NCM.

Exhibit 15. NCM transportation infrastructure funding plan

Timing	Cost	Funding Sources			
		TDT	New SDC	MSTIP	Developer
Years 0-10	\$ -	\$ -	\$ -	\$ -	\$ -
Years 10-20	\$ 2,475,000	\$ 1,237,500	\$ 1,237,500	\$ -	\$ -
Years 20+	\$ -	\$ -	\$ -	\$ -	\$ -
Total Costs	\$ 2,475,000	\$ 1,237,500	\$ 1,237,500	\$ -	\$ -
TDT / SDC Revenues		\$ 2,200,405	\$ 1,336,500		
TDT / SDC Surplus (Deficit)		\$ 962,905	\$ 99,000		

Source: DKS memorandum on "Transportation Findings for Preferred Scenario." From Carl Springer, Kevin Chewuk. To South Cooper Mountain Technical Advisory Committee. June 23, 2014.

4 Implications

Implementing this plan will take the hard work and cooperation of numerous public- and private-sector partners over the course of several decades. During that period of time, we can be assured that changes will occur, affecting the key assumptions that underpin this analysis: the addition (or not) of Urban Reserve areas to the Urban Growth Boundary; the timing of new development, the cost of needed infrastructure projects, the availability of funding sources, and the rates that are charged to new developers. As development on South Cooper Mountain unfolds, the South Cooper Mountain Infrastructure Funding Plan will need to be amended in response to these changes.

Thus, the primary purpose of this document isn't to set in stone the exact dollar amount that a certain funding source will contribute to a specific project that will be built decades from now. Instead, the document is intended to identify the types of infrastructure projects that appear to have adequate funding from existing sources, and the types of infrastructure projects that appear to require new funding tools and inter-jurisdictional collaboration. With that purpose in mind, we draw the following implications from the analysis:

- **Parks, water, and sanitary sewer infrastructure in the SCMAA should be adequately funded by existing SDCs and private developer contributions.** For these three types of infrastructure the projected SDCs to be generated by new development significantly exceeds the estimated project costs in the area. This surplus is expected, because the SDCs are intended to serve system-wide needs as well as local needs. The phasing of private development relative to the timing of infrastructure construction could lead to some cash flow issues, but these issues can be mitigated if infrastructure is generally extended incrementally to coincide with the timing of private development.
- **A regional facility approach to stormwater infrastructure will likely be challenging.** This approach requires cooperation among multiple private property owners, who may have different development timelines. Additionally, these facilities often require someone to fund the initial facility construction upfront, with private developers paying fees over time to finance the project. Without a source of seed-money to cover the upfront costs early on, this approach may not be feasible, which means that a traditional, site-specific approach to stormwater management needs to be available as a backup plan for the South Cooper Mountain area. The City, Clean Water Services, and private developers should work together to identify places and projects where the regional approach can be implemented through a cooperative approach.
- **Transportation infrastructure will be the most challenging component of the Infrastructure Funding Plan.** Transportation is the most expensive category of infrastructure for South Cooper Mountain, accounting for roughly \$112 million of the \$252 million in total infrastructure costs. This is particularly true in the SCMAA, where transportation projects account for over half of the total infrastructure costs. While new development in the area will generate a substantial amount of TDT and MSTIP revenue, a portion of those funds will be needed to pay for transportation projects all across

Washington County. The City and Washington County will need to continue to work together, over many years, to identify the specific funding mechanisms for specific projects. This Infrastructure Funding Plan provides an initial platform to work from. Private developers have expressed a willingness to adopt an additional transportation funding source for the area, like a supplemental SDC, which is clearly needed to fill the gap in transportation revenue.

Appendix A: Transportation Infrastructure Funding Plan - Detailed Tables

South Cooper Mountain Annexation Area

	ID	Project Description	Revenue by Source					Total
			TDI	New SDC	MSTIP	Developer	Other	
Years 0-10	2	Realign 175th Avenue between Outlook Lane and Cooper Mountain Lane, as a 3-lane County arterial.	\$ 854,250	\$ -	\$ 4,840,750	\$ -	\$ -	\$ 5,695,000
	6a	Create a new east-to-west 3-lane City Collector street from Tile Flat Road to the new north-to-south Collector Street.	\$ 813,750	\$ 813,750	\$ -	\$ 1,627,500	\$ -	\$ 3,255,000
	6b	Create a new east-to-west 3-lane City Collector street from the new north-to-south Collector Street to 175th Avenue.	\$ 2,742,500	\$ 2,742,500	\$ -	\$ 5,485,000	\$ -	\$ 10,970,000
	8b	Create a new north-to-south 2-lane City collector street between the UGB, just south of the Alvord Lane Extension and Scholls Ferry Road.	\$ 2,755,000	\$ 2,755,000	\$ -	\$ 5,510,000	\$ -	\$ 11,020,000
	10	Install a roundabout at the Kemmer Road/175th Avenue intersection.	\$ 625,000	\$ -	\$ 1,875,000	\$ -	\$ -	\$ 2,500,000
	12	Improve Scholls Ferry Road from Roy Rogers Road-175th Avenue to Tile Flat Road as a 5-lane County arterial.	\$ 2,041,250	\$ 2,041,250	\$ 4,082,500	\$ -	\$ -	\$ 8,165,000
	14a	Improve 175th Avenue from approximately 1000 feet north of Scholls Ferry Road to north edge of UGB line (south limits of project 2) to 3-lane County arterial (cost is 20% of 6.4M total project in previous estimate. Breakout cost tbd by DKS).	\$ 1,992,500	\$ 1,992,500	\$ -	\$ -	\$ -	\$ 3,985,000
	18	Construct a community shared-use path (South Cooper Loop Trail) along the north side of Scholls Ferry Road, between Tile Flat Road and 175th Avenue.	\$ 500,000	\$ 500,000	\$ -	\$ -	\$ -	\$ 1,000,000
	21	Construct a community shared-use path, along the north side of the proposed neighborhood route connecting the proposed north-to-south collector street with the proposed east-to-west collector street, east of 175th Avenue	\$ 280,000	\$ 280,000	\$ -	\$ -	\$ -	\$ 560,000
	C	Contingency Fund for Street Extensions	\$ 500,000	\$ 500,000	\$ -	\$ -	\$ -	\$ 1,000,000
		Subtotal	\$ 13,104,250	\$ 11,625,000	\$ 10,798,250	\$ 12,622,500	\$ -	\$ 48,150,000
Years 10-20	6c	New E-W Collector, western section, from central neighbor route to Tile Flat (cost listed is for the 33% of the \$14.3M previously estimated for E-W collector. Cost breakouts are to be determined by DKS)	\$ 2,132,500	\$ 2,132,500	\$ -	\$ 4,265,000	\$ -	\$ 8,530,000
	11	Improve the Scholls Ferry Road/ Horizon-Teal Boulevard intersection.	\$ 100,000	\$ 100,000	\$ -	\$ -	\$ 300,000	\$ 500,000
	13a	Improve Tile Flat Road from Scholls Ferry Road to the UGB, north of the new east-to-west Collector Street, as a 3-lane County arterial.	\$ 302,500	\$ 302,500	\$ 2,420,000	\$ -	\$ -	\$ 3,025,000
	22	Install crosswalk and pedestrian activated flasher on 175th Avenue at Weir Road.	\$ 16,000	\$ 16,000	\$ -	\$ 48,000	\$ -	\$ 80,000
		Subtotal	\$ 2,551,000	\$ 2,551,000	\$ 2,420,000	\$ 4,313,000	\$ 300,000	\$ 12,135,000
20+	17	Construct a community shared-use path (South Cooper Loop Trail) along the east side of Grabhorn Road and Tile Flat Road, between the west side of the Cooper Mountain Nature Park and Scholls Ferry Road.	\$ 915,000	\$ 915,000	\$ -	\$ -	\$ -	\$ 1,830,000
		Subtotal	\$ 915,000	\$ 915,000	\$ -	\$ -	\$ -	\$ 1,830,000
Total: All Years			\$ 16,570,250	\$ 15,091,000	\$ 13,218,250	\$ 16,935,500	\$ 300,000	\$ 62,115,000

Urban Reserve Area

	ID	Project Description	Revenue by Source				
			TDT	New SDC	MSTIP	Developer	Total
Years 0-10	20	Construct a community shared-use path, along the south side of the proposed neighborhood route between the proposed north-to-south collector street and 175th Avenue.	\$ 325,000	\$ 325,000	\$ -	\$ -	\$ 650,000
	Subtotal		\$ 325,000	\$ 325,000	\$ -	\$ -	\$ 650,000
Years 10-20	3	Realign the curve along Grabhorn Road near Stone Creek Drive, as a 3-lane County arterial.	\$ 2,287,500	\$ 2,287,500	\$ -	\$ -	\$ 4,575,000
	4	Realign the curve along Grabhorn Road north of Tile Flat Road, as a 3-lane County arterial.	\$ 1,465,000	\$ 1,465,000	\$ -	\$ -	\$ 2,930,000
	5	Realign Grabhorn Road east to provide a through connection with Tile Flat Road, as a 3-lane County arterial.	\$ 2,355,000	\$ 2,355,000	\$ -	\$ -	\$ 4,710,000
	9	Install a roundabout at the Rigert Road/170th Avenue intersection.	\$ 200,000	\$ 200,000	\$ 1,600,000	\$ -	\$ 2,000,000
	13b	Improve Grabhorn Road from the UGB, north of the new east-to-west Collector Street, to the UGB, near Stone Creek Drive, as a 3-lane County arterial.	\$ 417,000	\$ 417,000	\$ 3,336,000	\$ -	\$ 4,170,000
	13c	Improve Grabhorn Road from the UGB, near Stone Creek Drive, to Gassner Road, as a 3-lane County arterial.	\$ 433,500	\$ 433,500	\$ 3,468,000	\$ -	\$ 4,335,000
	14b	Improve 175th Avenue from the UGB, north of Alvord Lane, to Kemmer Road, as a 3-lane County arterial.	\$ 1,182,000	\$ 1,182,000	\$ 1,576,000	\$ -	\$ 3,940,000
	15	Improve Kemmer Road from 175th Avenue to the 185th extension as a 3-lane County arterial	\$ 1,295,000	\$ 1,295,000	\$ -	\$ -	\$ 2,590,000
19	Construct a community shared-use path (South Cooper Loop Trail) along the west side of 175th Avenue, between Scholls Ferry Road and Weir Road.	\$ 1,362,500	\$ 1,362,500	\$ -	\$ -	\$ 2,725,000	
Subtotal		\$ 10,997,500	\$ 10,997,500	\$ 9,980,000	\$ -	\$ 31,975,000	
Years 20+	1	Extend 185th Avenue from Gassner Road to Kemmer Road as a 3-lane County arterial.	\$ 576,000	\$ 576,000	\$ 4,608,000	\$ -	\$ 5,760,000
	8a	Create a new north-to-south 2-lane City collector street between Grabhorn Road and the UGB, just south of the Alvord Lane Extension.	\$ 2,366,250	\$ 2,366,250	\$ -	\$ 4,732,500	\$ 9,465,000
	Subtotal		\$ 2,942,250	\$ 2,942,250	\$ 4,608,000	\$ 4,732,500	\$ 15,225,000
Total: All Years			\$ 14,264,750	\$ 14,264,750	\$ 14,588,000	\$ 4,732,500	\$ 47,850,000

North Cooper Mountain

	ID	Project Description	Revenue by Source				
			TDT	New SDC	MSTIP	Developer	Total
Years 0-10		No Projects					
		Subtotal	\$ -	\$ -	\$ -	\$ -	\$ -
Years 10-20							
	16	Improve Gassner Road from Grabhorn Road to the 185th Avenue extension as a 2-lane County collector.	\$ 1,237,500	\$ 1,237,500	\$ -	\$ -	\$ 2,475,000
		Subtotal	\$ 1,237,500	\$ 1,237,500	\$ -	\$ -	\$ 2,475,000
20+		No Projects					
		Subtotal	\$ -	\$ -	\$ -	\$ -	\$ -
Total: All Years			\$ 1,237,500	\$ 1,237,500	\$ -	\$ -	\$ 2,475,000

Projects not included in SCM Infrastructure Funding Plan

ID	Project Description	Total Cost
7	Extend Tile Flat Road between Scholls Ferry Road and the Roy Rogers Road/Bull Mountain Road intersection, as a 3-lane County arterial.	\$ 18,780,000
8c	Create a new north-to-south 2-lane City collector street between Scholls Ferry Road and the Tile Flat Road.	\$ 1,935,000
N/A	Widen 209th Avenue-Grabhorn Road to five-lanes, north of Leland Drive.	\$ 27,385,000
N/A	Widen Farmington Road to five-lanes through the 185th Avenue intersection.	\$ 24,000,000
N/A	Add a westbound right turn lane at the Murray Boulevard/Beard Road-Brockman Road intersection.	\$ 245,000
N/A	Install a traffic signal at the Roy Rogers Road/Bull Mountain Road intersection.	\$ 355,000
N/A	Widen Roy Rogers Road-175th Avenue to five-lanes from just north of Scholls Ferry Road to just south of Beef Bend Road.	\$ 33,085,000
23	Construct a regional shared-use path (Cooper Mountain Regional Trail) between the 175th Avenue/Weir Road intersection, the 185th Avenue/Gassner Road intersection (along the west side of the 185th Avenue extension), and the Grabhorn Road/Gassner Road intersection.	\$ 2,915,000
		\$ 108,700,000