

## **Chapter 11. Costs and Funding**

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# 11. Costs and Funding

## 11.1 Financial Summary

The City of Portland's (City's) Habitat Conservation Plan (HCP) involves four programs to be funded by the City: the habitat conservation program, the monitoring program, the research program, and the adaptive management program. The habitat conservation program described in Chapter 7 includes individual measures in Bull Run, individual offsite measures in the Sandy River Basin, and a Habitat Fund for measures not yet specifically defined. Chapter 9 describes the compliance and effectiveness monitoring and research programs. The adaptive management program, also described in Chapter 9, includes provisions to select, fund, and implement additional measures if the measures in Chapter 7 do not achieve the expected biological results. The total 50-year estimated cost of the HCP is \$93,208,477 in 2008 dollars. Appendix I provides a table showing how the forecasted HCP costs are spread over the 50-year term. The total cost for each of the four programs is provided in Table 11-1. Additional detail is provided in this chapter.

**Table 11-1. Habitat Conservation Plan Financial Summary**

<b>Program</b>	<b>Estimated Cost (2008 dollars)<sup>a</sup></b>
<b>Habitat Conservation</b> (see Table 11-2)	\$70,666,277
<i>Bull Run Measures</i>	
<i>Offsite Measures</i>	
<i>Habitat Fund</i>	
<i>Staff Time<sup>b</sup></i>	
<b>Monitoring</b> (see Table 11-5)	\$5,175,200
<i>Compliance</i>	
<i>Effectiveness</i>	
<i>Staff Time<sup>b</sup></i>	
<b>Research</b> (see Table 11-6)	\$7,013,400
<i>Habitat Research</i>	
<i>Population Research</i>	
<i>Staff Time<sup>b</sup></i>	
<b>Adaptive Management</b> (see Table 11-7)	\$10,353,600
<i>Habitat Fund<sup>a</sup></i>	
<i>Insurance Fund</i>	
<i>Staff Time<sup>b</sup></i>	
<b>TOTAL</b>	<b>\$93,208,477</b>

<sup>a</sup>All HCP estimated costs will be adjusted for inflation during the term of the HCP. See Section 11.4 for more information.

<sup>b</sup>Staff time estimates are based on a total of approximately \$17 million (approximately three FTE) over 50 years, allocated by percentage to habitat conservation, monitoring, research, and adaptive management. See Tables 11-3, 11-4, 11-5, 11-6 and 11-7 for detail. Two of these FTEs are for fish biologists.

<sup>c</sup>A \$4-million subset portion of the Habitat Fund has dual purposes. To avoid double-counting in the table, this amount is shown above in the Adaptive Management Program subtotal and not in the Habitat Conservation Program subtotal.

## 11.2 Program Costs

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### 11.2.1 Habitat Conservation Program Costs

The estimated habitat conservation program costs are allocated to three categories: Bull Run measures, offsite habitat conservation measures, and the Habitat Fund. Totals for these categories are provided in Table 11-2. Detail is provided in Tables 11-3 and 11-4. Unless otherwise noted, the operation and maintenance (O&M) costs are 50-year totals for measures implemented continuously or annually (as applicable).

**Table 11-2. Habitat Conservation Program Estimated Costs**

Habitat Conservation Measure Category	Estimated Cost in 2008 Dollars (50-year total)
Bull Run Measures (including staff time) <sup>a</sup>	\$44,037,787
Offsite Measures (including staff time)	\$21,628,490
Habitat Fund <sup>b</sup>	\$5,000,000
<b>TOTAL</b>	<b>\$70,666,277</b>

<sup>a</sup>Includes funding for maintenance of land and maintenance of habitat improvements.

<sup>b</sup>A \$4-million subset portion of the \$9-million Habitat Fund has dual purposes. To avoid double-counting, this amount is not included in this table and is instead shown in Table 11-1 and in Table 11-7 as Adaptive Management.

### Bull Run Habitat Conservation Measures

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Bull Run habitat conservation measure costs are shown in Table 11-3. Estimated costs for the Bull Run measures include costs of operating the City’s well field to provide water when needed to meet the needs of both people and fish, a pro-rated portion of well field maintenance costs, as well as the costs of habitat conservation measures located in either the lower Bull Run River or the Bull Run reservoirs. Well field maintenance helps ensure that the City’s groundwater source functions properly when needed. Based on current supply assumptions and availabilities, groundwater is a crucial component of maintaining flows and temperatures that will benefit the covered species. Planning and permitting for the capital costs are included in the project-specific estimates. Planning, permitting, and project management for the O&M costs are included in the Water Bureau staff time subtotal. The staff time estimates comprise 30 percent of the three full-time equivalents (FTE) mentioned in Table 11-1.

**Table 11-3. Bull Run Habitat Conservation Measure Estimated Costs<sup>a</sup>**

<b>Measure</b>	<b>Type<sup>b</sup></b>	<b>Estimated Cost in 2008 Dollars (50-year total)</b>
<b><i>Flow Measures<sup>c</sup></i></b>		
Flow releases to meet minimum instream flows (costs of groundwater operation, prorated to amount needed to meet flow release commitments)	O&M	\$16,082,750
Well field maintenance (costs attributable to more frequent use of well field due to flow release commitments)	Capital	\$10,905,993
<b><i>Temperature Measures</i></b>		
Multi-level intakes at Dam 2 (temperature)	Capital	\$9,613,132
Stilling pool bypass pipe (temperature)	Capital	\$208,000
<b><i>Lower Bull Run River Measures</i></b>		
Spawning gravel placement	O&M	\$928,288
Walker Creek fish passage	Capital	\$989,000
<b><i>Bull Run Reservoir Measures</i></b>		
Cutthroat trout rescue	O&M and Capital	\$280,225
<b><i>Water Bureau Staff Time to Implement Bull Run Measures</i></b>		
Staff time (30% of total allocated to staff time)	O&M	\$5,030,400
<b>TOTAL</b>		<b>\$44,037,787</b>

<sup>a</sup> The following measures will be implemented with in-house staff and are included in the staff time dollar amount: F-4 Little Sandy Flow Agreement, R-1 Reservoir Operations, R-3 Reed Canarygrass Removal, O&M-1 Infrastructure O&M, O&M-2 Spill Prevention, H-2 Riparian Land Protection, W-1 Spotted Owls, W-2 Bald Eagles, W-3 Fisher.

<sup>b</sup> O&M is an acronym for operation and maintenance.

<sup>c</sup> Includes costs associated with flow downramping (F-3) and the flow aspects of temperature management (T-1 and T-2).

**Offsite Sandy River Basin Habitat Conservation Measures**

The offsite Sandy River Basin measure costs are shown in Table 11-4. These costs were derived from the Sandy River Watershed Draft Restoration Actions matrix (Sandy River Basin Partners 2002). Estimates from the 2002 matrix were inflated 16.6 percent to 2008 dollars, based on the Consumer Price Index (CPI) for Portland. These measure costs were also increased by 15 percent as a contingency in case actual costs are higher than estimated costs. For more information on the funding, see Section 11.3.1, Habitat Conservation Program Funding. Most of the planning, permitting, and project management for the offsite measures will be done by Water Bureau staff, and related costs are included in the staff time subtotal shown in Table 11-4. Some of the permitting costs for offsite capital projects may be contracted and are shown in a separate line item in Table 11-4.

If measures are not implemented as planned and substitute measures are implemented (per the Adaptive Management Program described in Chapter 9), the funding will come from the amounts allocated for the original measure (with inflation if implemented at a later date).

If measures require minor maintenance, such as replanting or invasive plant removal, costs will be paid from the allocation of \$3,012,956 for Land and Habitat Improvement Maintenance included in the funding for the habitat conservation program and shown in Table 11-4.

**Table 11-4. Estimated Offsite Habitat Measure Costs Plus 15% Contingency Allowance**

Measure number	Measure	Capital or O&M <sup>a</sup>	Cost in 2008 Dollars <sup>b</sup> + 15% Contingency Allowance
<b>HCP Years 1-5</b>			
H-5	Gordon 1A/1B LW Placement	O&M	\$214,531
H-6	Trout 1A LW Placement	O&M	\$53,633
H-7	Trout 2A LW Placement	O&M	\$15,017
H-11	Sandy 1 Riparian Easement and Improvement	Capital	\$103,243
H-12	Sandy 2 Riparian Easement and Improvement	Capital	\$633,537
H-13	Gordon 1A/1B Riparian Easement and Improvement	Capital	\$732,087
H-16	Alder 1A/2 Riparian Easement and Improvement	O&M	\$403,587
H-22	Boulder 1 Riparian Easement and Improvement	Capital	\$136,093
H-26	Boulder 0/1 LW Placement	O&M	\$48,270
P-2	Alder 1 Fish Passage	O&M	\$402,246
P-3	Alder 1A Fish Passage	O&M	\$80,449
P-4	Cedar 1 Fish Passage	O&M	\$3,700,000
<b>Subtotal</b>			<b>\$6,522,691</b>

Table continued on next page

**Table 11-4. Estimated Offsite Habitat Measure Costs Plus 15% Contingency Allowance, continued**

Measure number	Measure	Capital or O&M <sup>a</sup>	Cost in 2008 Dollars + 15% Contingency Allowance
<b><i>HCP Years 6-10</i></b>			
H-3	Little Sandy 1 and 2 LW Placement	O&M	\$96,539
H-4	Sandy 1 and 2 Log Jams	O&M	\$670,409
H-8	Sandy 1 Reestablishment of River Mouth	O&M	\$1,186,624
H-9	Sandy 1 Channel Reconstruction	O&M	\$402,246
H-15	Cedar 2 and 3 Riparian Easement and Improvement	Capital	\$460,705
H-17	Cedar 2 and 3 LW Placement	O&M	\$429,062
H-19	Salmon 1 Riparian Easement and Improvement	Capital	\$211,179
H-23	Salmon 2 Miller Quarry Acquisition	Capital	\$335,205
H-25	Salmon 2 Carcass Placement	O&M	\$4,157
F-5	Cedar Creek Purchase Water Rights	Capital	\$1,005,614
<b>Subtotal</b>			<b>\$4,801,739</b>
<b><i>HCP Years 11-15</i></b>			
H-14	Sandy 3 Riparian Easement and Improvement	Capital	\$61,007
H-18	Sandy 8 Riparian Easement and Improvement	Capital	\$234,643
H-20	Salmon 2 Riparian Easement and Improvement	Capital	\$337,886
H-21	Salmon 3 Riparian Easement and Improvement	Capital	\$112,628
H-24	Salmon 2 Miller Quarry Restoration	Capital	\$475,991
H-27	Zigzag 1A Channel Design	O&M	\$268,164
H-28	Zigzag 1A/1B Riparian Easement and Improvement	Capital	\$113,118
H-29	Zigzag 1A/1B/1C Carcass Placement	O&M	\$26,816
<b>Subtotal</b>			<b>\$1,630,254</b>
<b>Subtotal for all three time periods</b>			<b>\$12,954,684</b>

**Table 11-4. Estimated Offsite Habitat Measure Costs Plus 15% Contingency Allowance, continued**

Measure number	Measure	Capital or O&M <sup>a</sup>	Cost in 2008 Dollars + 15% Contingency Allowance
	Purchase portion of LW needed for multiple measures <sup>c</sup>	O&M	\$530,450
	Design and Permitting	Capital	\$100,000
	Land and Habitat Improvement Maintenance	O&M	\$3,012,956
	Staff Time <sup>d</sup> (30% of total allocated to staff time)		\$5,030,400
		<b>TOTAL</b>	<b>\$21,628,490</b>

<sup>a</sup>O&M is an acronym for “operation and maintenance”.

<sup>b</sup> Will be inflation-adjusted. See Section 11.4

<sup>c</sup> The offsite measures involving LW will require the City to obtain approximately 1,500 large logs and rootwads. Some of this material will be available for only the cost necessary to transport the wood. In other cases, the City might need to purchase logs commercially. The \$500,000 included here is a very rough estimate of the funding that might be required.

<sup>d</sup> Measure H-10, Turtle Survey and Relocation, will also be performed with in-house staff and is included in the staff time estimate.

### Habitat Fund

As described in Chapter 7, the City has also allocated \$9 million to a Habitat Fund for future partnership projects. Selection of projects will be guided by the Sandy River Basin Restoration Strategy. Decision-making for the fund is described in Chapters 7 and 9. Specific projects have not yet been selected, so specific project costs associated with the Habitat Fund are not yet known. Five-year funding increments for the Habitat Fund are described further in the Funding section below. Table 11-2 includes a \$5-million portion of the Habitat Fund (to avoid double-counting in Table 11-7). The remaining \$4 million shown in Table 11-7 is dedicated to adaptive management needs, but will be used for additional partnership projects if not needed for adaptive management (see Measure H-30).

### 11.2.2 Monitoring Program Estimated Costs

Costs for the monitoring program are shown in Table 11-5. The monitoring activities included are described in Chapter 9. The methodologies are described in Appendix F.

**Table 11-5. Monitoring Program Estimated Costs**

<b>Monitoring Measure Category</b>	<b>Estimated Cost in 2008 Dollars<sup>a</sup> (50-year total)</b>
Flow and Water Temperature Monitoring <sup>b,c</sup>	\$910,000
Effectiveness Monitoring for Instream Projects	\$1,750,000
Staff Time (15% of total allocated to staff time)	\$2,515,200
<b>TOTAL</b>	<b>\$5,175,200</b>

<sup>a</sup> Will be inflation-adjusted. See Section 11.4.

<sup>b</sup>Monitoring measures not specifically listed will be completed with in-house staff and are included in the staff time estimate. See Chapter 9 for a complete list of monitoring measures.

<sup>c</sup>USGS flow monitoring is included.

### 11.2.3 Research Program Estimated Costs

The costs to implement the research measures described in Chapter 9 are shown in Table 11-6. Some of these amounts are parts of larger partnership programs (see details in Chapter 9). The methodologies are described in Appendix F.

**Table 11-6. Research Program Estimated Costs**

<b>Research Measure</b>	<b>Estimated Cost in 2008 Dollars (50-year total)</b>
<b><i>Habitat Research</i></b>	
Gravel Monitoring	\$500,000
Scour Monitoring	\$75,000
<b><i>Population Research</i></b>	
Adult Chinook Population Data	\$600,000
Juvenile Outmigrant Data (Smolt Trapping)	\$5,000,000
<b>Subtotal</b>	<b>\$6,175,000</b>
Staff Time (5% of total allocated to staff time) <sup>a</sup>	\$838,400
<b>TOTAL</b>	<b>\$7,013,400</b>

<sup>a</sup>All estimated costs for TDG research are allocated to Staff Time

### **11.2.4 Adaptive Management Program Estimated Costs**

Costs involved in the adaptive management program include responses to monitoring of new measures if effectiveness monitoring indicates original measures have not met their measurable objectives, as well as responses to assessments of the overall effectiveness of the HCP. Elements of the adaptive management program are described in Chapter 9. Actual future costs associated with adaptive management are dependent on information not yet available. (See Program Funding section below for the total dollars allocated.)

## **11.3 Program Funding**

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The City will pay the costs of the HCP with revenues from the sale of water. Each spring, the City Council adopts an annual budget for the Water Bureau based on anticipated costs and revenues. The annual budget is a public document and is available on the City's web site. Commitments made in the HCP will be included in the annual budget requests to the Council. Although the City Council will not automatically fund these expenses, the City understands that the Incidental Take Permit (ITP) coverage would be at risk, and federal enforcement measures would be possible, if adequate budgets are not approved and measures are not implemented as planned.

### **City Constraints Associated with Funding**

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The City recognizes that changes in the allocation of funds from one project or action to another might be necessary during the 50-year term of the HCP. Reallocation decisions will be made by the signatories of the ITP, but will take into account advice given by the HCP Implementation Committee (see Framework for Adaptive Response in Chapter 9). To allow flexibility, the City will accommodate reallocation of funds within the following constraints:

- The ratio of operating expenses to capital costs must remain constant.
- The increments of funding must adhere to the schedule in Figure 11-1.
- Funds can be reallocated within programs and categories, but not between programs and categories; some category totals are capped.

Details of these constraints are described in the sections below.

### ***Ratio of Operating Expenses to Capital Costs***

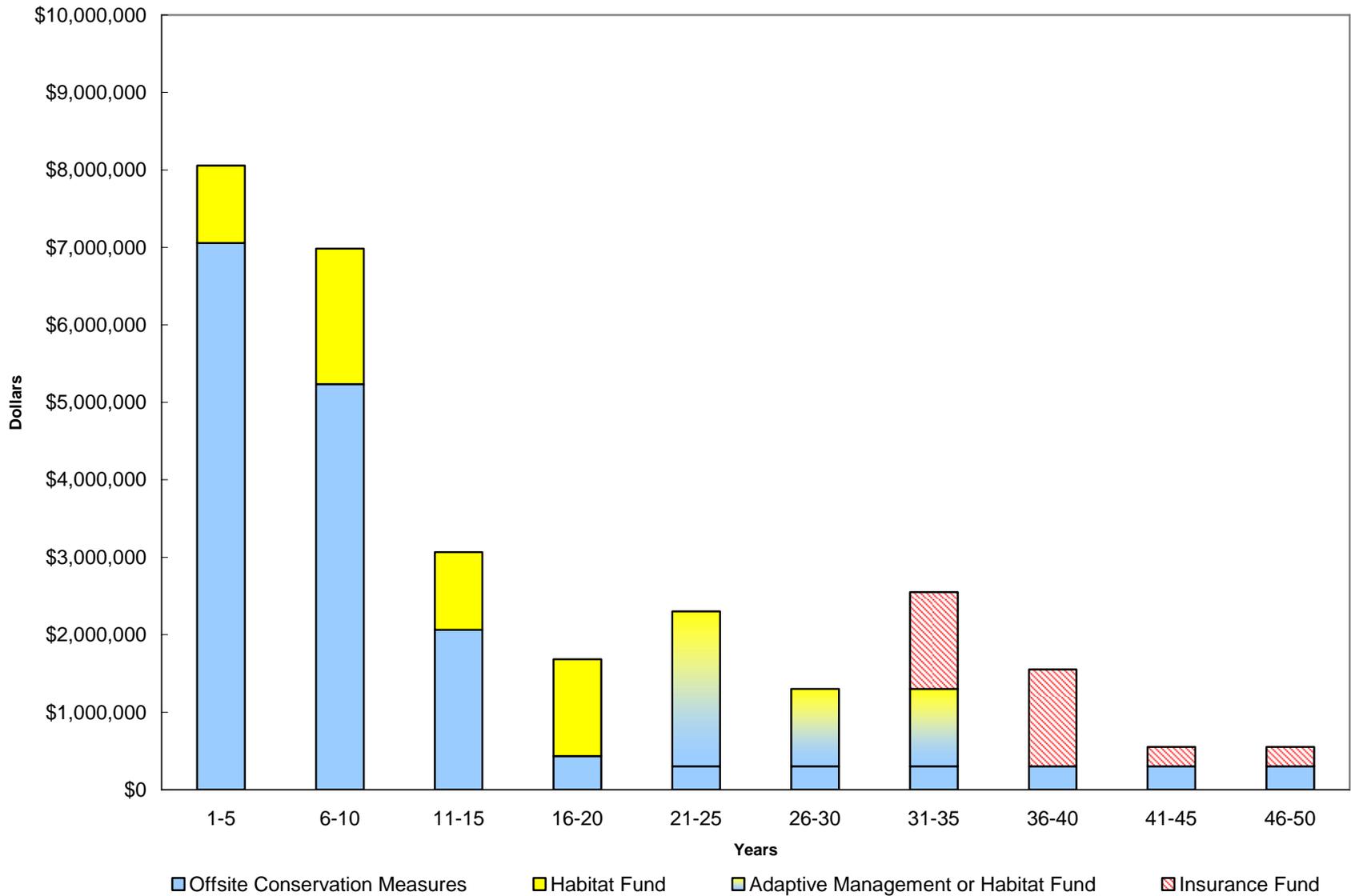
Accounting regulations of the Government Accounting Standards Board require that some of the HCP cost types be paid as operating expenses, while others can be paid as capital costs. Bonds sold to fund capital costs are paid back over time (from water sales revenue) and have less impact on annual water rates than do operating expenses, which are paid as they are incurred. To manage the annual and total costs to ratepayers of implementing the HCP, the City must maintain a constant overall ratio of operating expenses to capital costs for all of the HCP commitments. The City's expectation is that 50 percent (+/- 10 percent) of the total Habitat Fund project costs will be projects that can be financed as capital costs.

***Scheduled Funding Increments***

The City has carefully spread HCP investments over time to achieve habitat conservation benefits, to accommodate adaptive management contingencies, and to manage the impact on water ratepayers. The increments of investment are shown in Figure 11-1. The City's analysis has shown that shifting funds forward or backward in time from the defined increments will have unacceptable effects on water rates. For this reason, the funding allocations are confined to the time periods shown. Shifts in the allocation of project costs can occur only within, not between, the allocated time periods. (See Section 9.3 about use of Habitat Fund for adaptive management prior to Year 20).

***Limits on City's Financial Commitments***

The City's total financial commitments to offsite habitat conservation measures, monitoring measures, adaptive management measures, the Habitat Fund, and the Insurance Fund are capped at the totals shown in Table 11-1. These capped amounts will be inflation-adjusted (see Section 11.4). There is no similar limit on the City's financial commitment to accomplish the Bull Run habitat conservation measures. Details are provided in Section 11.3.1.



**Figure 11-1. Funding Committed to Offsite Conservation Measures, Habitat Fund/Adaptive Management, and Insurance Fund in 2008 Dollars<sup>a</sup>**

<sup>a</sup>Offsite conservation measures include money for purchasing large wood, land maintenance, design and permitting, and providing fish passage in Cedar Creek (Measure P-4). See Appendix I for detail.

### 11.3.1 Habitat Conservation Program Funding

#### Bull Run Habitat Conservation Measures

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The Bull Run measure costs shown in Table 11-3 are estimated. The City has not placed a financial limit on funding for the Bull Run habitat conservation measures. For example, if costs to pump groundwater to meet flow and temperature requirements of the HCP are higher than estimated in Table 11-3, the City will pay the additional costs without a cap. Additional costs to fund the Bull Run measures (beyond those estimated in Table 11-3) will not be deducted from the capped funding provided in the HCP for offsite measures, the Habitat Fund, or the Insurance Fund. Funding for the Bull Run measures is, however, subject to the provisions of Chapter 10, Changed Circumstances.

#### Offsite Habitat Conservation Measures

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The amounts shown in Table 11-4 are the estimated cost of each habitat conservation measure, including a 15 percent contingency allowance. The City will pay up to the amount shown in Table 11-4 for each measure plus an addition for CPI inflation up to the date of implementation. For example, the funding for a measure implemented in 2010 would be inflated from the 2008 estimate to 2010 based on the CPI for Portland, Oregon. The CPI inflated amount represents the financial limit of the City's commitments for each project.

The City is confident that the dollar amounts allocated will be adequate to meet the measurable objectives described in Chapter 9. If, however, after detailed project planning, the measure is shown to cost more than the amount shown in Table 11-4 (inflated to the implementation date), the City will consult with NMFS and with the HCP Implementation Committee about how to proceed. A variety of options are possible, including the following:

- The extra cost, above the amount shown in Table 11-4 plus CPI inflation, could be paid with savings from offsite measures that cost less than expected.
- The extra cost, above the amount shown in Table 11-4 plus CPI inflation, could be deducted from remaining unallocated dollars in the Habitat Fund.
- An alternative funding source could be found to supplement City funding for the project.
- A lower-cost measure with similar habitat benefits could be identified and implemented.
- The scope of the project could be modified.

The City will not pay for expenses that exceed the per-project totals shown in Table 11-4 (as inflated to implementation date), except as provided in the Adaptive Management Program or in Chapter 10, Changed and Unforeseen Circumstances. The scheduling of the offsite measures is also constrained by the availability of the funding increments shown in Table 11-4.

## Habitat Fund

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The City has allocated \$9 million to a Habitat Fund. The Habitat Fund will be available in the scheduled increments as shown in Figure 11-1. If needed, monitoring for Habitat Fund projects will be paid from the total allocated to the Habitat Fund.

A \$4 million subset of this Fund has been specifically set aside for adaptive management activities as described in Chapter 9. If the \$4 million is not needed for adaptive management, it will remain available to fund additional habitat conservation measures as described in Chapter 7. The blue-to-yellow shading in Figure 11-1 highlights the multipurpose function of the Habitat Fund.

### 11.3.2 Monitoring Program Funding

The City will fund the monitoring program as shown in Table 11-5. The amounts defined in Table 11-5 are capped totals. The City will accommodate reallocation of funds within the categories shown in the table, but will not pay more than the totals shown for each category, as adjusted for inflation (see Section 11.4).

### 11.3.3 Research Program Funding

The City will fund the research program as shown in Table 11-6. The amounts defined in Table 11-6 are capped totals. The City will accommodate reallocation of funds within the categories shown in the table, but will not pay more than the totals shown for each category. Use of the funding allocated for juvenile salmonid outmigrant research may be reviewed by NMFS and the City and adjusted as needed to address population research needs in the Sandy River Basin. The City's commitment is limited to \$100,000 per year for the term of the HCP, as adjusted for inflation (see Section 11.4).

### 11.3.4 Adaptive Management Program Funding

As mentioned above, up to \$4 million of the Habitat Fund is available for adaptive management, according to the framework described in Chapter 9 and according to the schedule shown in Figure 11-1. If needed for measures implemented from the Habitat Fund (for adaptive management purposes), related monitoring will also be funded from this \$4 million.

A \$3-million Insurance Fund is also available in four five-year increments as shown in Figure 11-1. Related monitoring will also be funded from this \$3 million if it is needed for measures implemented with the Insurance Fund. If the Insurance Fund is not needed for adaptive management at the milestones described in Chapter 9, it will revert to the City and not be available for other HCP costs.

The adaptive management funding allocations are shown in Table 11-7. These amounts are capped totals (with inflation adjustment, see Section 11.4), except as affected by provisions of Chapter 10, Changed and Unforeseen Circumstances.

**Table 11-7. Adaptive Management Funding Allocations**

<b>Adaptive Management Funding Category</b>	<b>Allocation in 2008 Dollars<sup>a</sup> (50-year total)</b>
Habitat Fund	\$4,000,000
Insurance Fund	\$3,000,000
Staff Time (20% of total allocated to staff time)	\$3,353,600
<b>TOTAL</b>	<b>\$10,353,600</b>

<sup>a</sup> Will be inflation-adjusted. See Section 11.4.

## **11.4 Adjustments for Inflation or Deflation**

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All cost estimates and commitments in the HCP are shown in 2008 dollars. These dollar commitments will be adjusted annually for inflation or deflation, based on the CPI for Portland, Oregon.

The original cost estimates for the offsite habitat conservation measures were developed in 2002. Those estimates were updated to 2008 dollars, as described above in Section 11.2.1.