6. BENEFITS AND IMPACTS

Manhattan Beach

The Southern California economy is dependent on clean water and clean beaches.

6.1 Introduction

This section summarizes the potential impacts and benefits of the IRWM Plan. The IRWM Plan Impact and Benefit Standard states that the IRWM Plan must contain a discussion of potential impacts and benefits of Plan implementation, and that this discussion must include both impacts and benefits within the IRWM Region, between regions, and those directly affecting DAC, environmental justice (EJ) related concerns, and Native American communities. The Appendix goes on to state that the benefit/impact analysis does not need to be extensive or exhaustive. This section is organized such that benefits and impacts are discussed relative to the implementation of GLAC Region's Objectives listed in Chapter 3. Given the integrated nature of the GLAC Region, it is difficult to determine what objectives and targets would provide a disproportionate impact or benefit to DACs or create EJ concerns. However, as part of specific project screening, potential impacts and benefits relative to DACs and EJ will be considered. Any DAC and EJ related concerns that could be determined at this higher Regional level are noted in each section. Because there are no documented Native American lands in the GLAC Region, no assessment of benefits or impacts could be conducted relative to Native American lands.

This Plan update has quantified specific targets for meeting the Plan's objectives. Target information is the first tool for understanding Plan impacts and benefits. The information presented in the tables below is primarily based on a programmatic assessment of benefits and impacts. Another resource of information on benefits and impacts for this Region can be found in the Region's project database. The database website presents information for each project in the Plan and allows that information to be used to develop an overall picture of projected benefits and costs for the projects in the Plan.

6.2 Benefits and Impacts Review

The impacts and benefits described in this chapter will be reviewed by the LC and SCs as projects are implemented and additional information is tracked and recorded on project and Plan performance.

6.3 Impacts and Benefits of IRWMP Implementation

To consider potential environmental effects that could result from IRWM Plan implementation, an analysis of potential impacts and benefits of the Plan's objectives and targets was conducted. The tables below list each of the GLAC IRWM objectives and the specific targets to accomplish these objectives in the next twenty years.

- Table 6-1 describes the potential impacts and benefits of the Region's efforts to optimize local water resources to reduce the Region's reliance on imported water.
- Table 6-2 describes the potential impacts and benefits of the Region's efforts to improve water quality of receiving waters through enhanced stormwater capture.
- Table 6-3 describes the potential impacts and benefits of the Region's efforts to protect, restore, and enhance natural processes and habitats.
- Table 6-4 below describes the potential impacts and benefits of the Region's efforts to increase watershed-friendly recreational space for all communities.
- Table 6-5 below describes the potential impacts and benefits of the Region's efforts to reduce flood risk in flood prone areas by either increasing protection or decreasing needs using integrated flood management approaches.

Image courtesy of West Basin Municipal Water District

Water resources projects can provide many benefits, including improved water quality.

Table 6-1: Optimize local water resources to reduce the Region's reliance on imported water

Planning Target	Within IRWM Region		Inter-Regional	
	Potential Impacts	Potential Benefits	Potential Impacts	Potential Benefits
Conserve 117,000 AFY of water through water use efficiency and conservation measures	• Decrease in finances for existing supply operations and infrastructure • Loss of flow to downstream users	• Reduced need to develop new higher cost supplies • Reduced dependence on imported water • Increased available water supply to meet greater demand • Improved air quality through decreased GHG and other emissions • Decreased energy consumption for water treatment and conveyance associated with imported water	None identified	• Increased available Bay-Delta and Colorado River supply and/or environmental flows • Improved air quality through decreased GHG and other emissions • Decreased energy consumption for water treatment and conveyance associated with imported water
Create additional ability to pump 83,000 AFY of groundwater using a combination of treatment, recharge, and storage access	• Increased energy, and GHG emissions associated with pumping and higher treatment levels	• Reduced dependence on imported water • Reduced need for highest cost supply • Increased available water supply to meet greater demand • Improved groundwater quality • Improved access to local supply and increased reliability • Improved use of groundwater basins • Improved air quality through decreased GHG and other emissions • Decreased energy consumption for water treatment and conveyance associated with imported water	None identified	• Increased available Bay-Delta and Colorado River supply and/or environmental flows • Improved air quality through decreased GHG and other emissions • Decreased energy consumption for water treatment and conveyance associated with imported water
Increase indirect potable reuse by 80,000 AFY	• Reduced recycled water supply for non-potable use • Increased treatment level and energy use and GHG emissions over non-potable supply • Reduced effluent discharge available for river flows • Increased need for recharge facility capacity • Increased need for brine disposal	• Reduced dependence on imported water • Reduced need for highest cost supply • Increased available water supply to meet greater demand • Improved groundwater quality • Improved access to local supply and increased reliability • Improved use of groundwater basins • Increased water quality and beneficial use of WWTP/ recycled water flows • Decreased need for non-potable distribution system construction • Improved air quality through decreased GHG and other emissions relative to imported supply • Decreased energy consumption for water treatment and conveyance associated with imported water	None identified	• Increased available Bay-Delta and Colorado River supply and/or environmental flows • Improved air quality through decreased GHG and other emissions relative to imported supply • Decreased energy consumption for water treatment and conveyance associated with imported water

Table 6-1: Optimize local water resources to reduce the Region's reliance on imported water

Planning Target	Within IRWM Region		Inter-Regional	
	Potential Impacts	Potential Benefits	Potential Impacts	Potential Benefits
Increase non-potable reuse of recycled water by 83,000 AFY	• Reduced recycled water supply for indirect potable use • Reduced effluent discharge available for in-stream flows • Increased infrastructure construction	• Reduced dependence on imported water • Reduced need for highest cost supply • Increased available water supply to meet greater demand • Improved access to local supply and increased reliability • Increased water quality and beneficial use of WWTP/ recycled water flows • Decreased need for treatment to potable or indirect potable standards Improved air quality through decreased GHG and other emissions relative to imported supply • Decreased energy consumption for water treatment and conveyance associated with imported water • Advancement of indirect potable engineering and application for use by other entities	None identified	• Increased available Bay-Delta and Colorado River supply and/or environmental flows • Improved air quality through decreased GHG and other emissions relative to imported supply • Decreased energy consumption for water treatment and conveyance associated with imported water • Advancement of indirect potable engineering and application for use by other entities
Increase capture and use of stormwater runoff by 27,000 AFY that is currently lost to the ocean	• Reduced in-stream flows • Loss of drainage flow to downstream users	• Reduced dependence on imported water • Reduced need for highest cost supply • Increased available water supply to meet greater demand • Improved access to local supply and increased reliability • Reduction of pollutants to receiving waters • Improved air quality through decreased GHG and other emissions relative to imported supply • Decreased energy consumption for water treatment and conveyance associated with imported water	None identified	• Increased available Bay-Delta and Colorado River supply and/or environmental flows • Improved air quality through decreased GHG and other emissions relative to imported supply • Decreased energy consumption for water treatment and conveyance associated with imported water
Increase both centralized and distributed stormwater infiltration by 75,000 AFY	• Increased construction for individual projects (decentralized) • Reduced in-stream flows • Loss of drainage flow to downstream users	• Reduced dependence on imported water • Reduced need for highest cost supply • Increased available water supply to meet greater demand • Improved access to local supply and increased reliability • Reduction of pollutants to receiving waters • Improved groundwater quality • Increased recharge of groundwater basins for supply and storage • Improved air quality through decreased GHG and other emissions relative to imported supply • Decreased energy consumption for water treatment and conveyance associated with imported water	None identified	• Increased available Bay-Delta and Colorado River supply and/or environmental flows • Improved air quality through decreased GHG and other emissions relative to imported supply • Decreased energy consumption for water treatment and conveyance associated with imported water

Table 6-1: Optimize local water resources to reduce the Region's reliance on imported water

Planning Target	Within IRWM Region		Inter-Regional	
	Potential Impacts	Potential Benefits	Potential Impacts	Potential Benefits
Develop 26,000 AFY of ocean water desalination	• Increased construction-related impacts • Increased treatment level and energy use and GHG emissions • Entrainment of aquatic species • Decreased habitat for marine species • Increased brine management and disposal issues	• Reduced dependence on imported water • Increased available water supply to meet greater demand • Improved access to previously untapped local supply and increased reliability • Improved air quality through decreased GHG and other emissions relative to imported supply • Decreased energy consumption for water treatment and conveyance associated with imported water • Advancement of desalination engineering and application for use by other entities • Increased greenspace, native plants habitats, and recreational facilities (multi-benefit projects)	• Increased treatment level and energy use and GHG emissions • Entrainment of aquatic species • Decreased habitat for marine species	• Increased available Bay-Delta and Colorado River supply and/or environmental flows • Improved air quality through decreased GHG and other emissions relative to imported supply • Decreased energy consumption for water treatment and conveyance associated with imported water • Advancement of desalination engineering and application for use by other entities

Table 6-2: Improve Water Quality of Receiving Waters

Planning Target	Within IRWM Region		Inter-Regional	
	Potential Impacts	Potential Benefits	Potential Impacts	Potential Benefits
Develop 58,000 AF of new stormwater capture capacity	• Increased construction for individual projects (decentralized) • Reduced in-stream flows • Loss of drainage flow to downstream users	• Reduction of pollutants to receiving waters • Reduction of contaminant loading on land cover and use of contaminants • Increased marine and fresh water quality for aquatic and riparian habitats • Decreased potential for beach closures and increased ability to use marine waters for recreation • Improved air quality through decreased GHG and other emissions relative to imported supply • Decreased energy consumption for water treatment and conveyance associated with imported water • Advancement of water quality Best Management Practices engineering and application for use by other entities	None identified	• Increased available Bay-Delta and Colorado River supply and/or environmental flows • Increased marine water quality for aquatic and riparian habitats • Decreased potential for beach closures and increased ability to use marine waters for recreation • Improved air quality through decreased GHG and other emissions relative to imported supply • Decreased energy consumption for water treatment and conveyance associated with imported water • Advancement of water quality Best Management Practices engineering and application for use by other entities

Table 6-3: Protect, Restore and Enhance Natural Processes and Habitats

Planning Target	Within IRWM Region		Inter-Regional	
	Potential Impacts	Potential Benefits	Potential Impacts	Potential Benefits
Preserve or protect by 2,000 acres of terrestrial aquatic habitat	• Increased short-term construction and site-specific impacts • Loss of potential for future urban land uses and associated local revenue	• Reduced invasive species • Increased potential for future habitat for endangered species • Increased potential for future passive recreational opportunities • Maintained receiving water quality • Improved ability to increase or maintain habitat corridors	None identified	• Increased flyway protection for birds and related species • Improved ability to increase or maintain habitat corridors
Enhance 6,000 acres of terrestrial aquatic habitat	• Increased short-term construction and site-specific impacts • Loss of potential for future urban land uses and associated local revenue	• Reduced invasive species • Enhanced habitat for endangered species • Enhanced passive recreational opportunities • Improved receiving water quality • Improved ability to increase or maintain habitat corridors • Increased potential for augmentation of stream flows • Increased potential for integrated flood management and reduced flood risk • Increased potential for local sustainable fisheries and recreation-based businesses • Increased potential educational areas	None identified	• Increased flyway protection for birds and related species • Improved ability to increase or maintain habitat corridors
Restore or create 4,000 acres of terrestrial aquatic habitat	• Increased short-term construction and site-specific impacts • Loss of urban land uses and associated local revenue	• Reduced invasive species • Increased habitat for endangered species • Increased passive recreational opportunities • Improved receiving water quality • Improved ability to increase habitat corridors • Increased potential for augmentation of stream flows • Increased potential for integrated flood management and reduced flood risk • Increased potential for local sustainable fisheries and recreation-based businesses • Increased potential educational areas	None identified	• Increased flyway protection for birds and related species • Improved ability to increase habitat corridors

Table 6-4: Increase watershed friendly recreation space for all communities

Planning Target	Within IRWM Region		Inter-Regional	
	Potential Impacts	Potential Benefits	Potential Impacts	Potential Benefits
Create 38,000 acres of open space	• Increased short-term construction and site-specific impacts • Loss of non-recreation related urban land uses and associated local revenue	• Increased and enhanced passive and active recreational opportunities and experiences • Increased health of residents • More livable communities • Improved receiving water quality • Increased potential for augmentation of stream flows • Increased potential for integrated flood management that include recreation benefits • Potential economic benefits to recreation-supporting businesses	None identified	• Increased and enhanced passive and active recreational opportunities and experiences • Increased health of visitors
Create 25,000 acres of urban parks	• Increased short-term construction and site-specific impacts • Loss of non-recreation related urban land uses and associated local revenue	• Increased and enhanced active recreational opportunities and experiences • Increased health of residents • More livable communities • Improved receiving water quality • Increased potential for integrated flood management that include recreation benefits • Improved access for DACs to recreational and educational opportunities • Potential economic benefits to recreation-supporting businesses	None identified	• Increased and enhanced passive and active recreational opportunities and experiences • Increased health of visitors

Table 6-5: Reduce flood risk in flood prone areas by either increasing protection or decreasing needs using integrated flood management approaches

Planning Targets	Within IRWM Region		Inter-Regional	
	Potential Impacts	Potential Benefits	Potential Impacts	Potential Benefits
Reduce flood risk in 11,400 acres of flood prone areas by either increasing protection or decreasing needs using integrated flood management approaches	• Increased short-term construction and site-specific impacts	• Reduced risk to property and life • Reduced flood insurance costs • Increased multiple benefits of individual projects • Increased potential for water supply enhancement • Increased potential for water quality enhancement • Increased potential for habitat enhancement • Increased potential for recreation enhancement • Advancement of integrated flood management engineering and application for use by other entities	None identified	• Advancement of integrated flood management engineering and application for use by other entities
Remove 68 million cubic yards of sediment from debris basins and reservoirs.	• Increased short-term removed sediment transportation and site-specific impacts • Increased sediment disposal issues if end user cannot be located	• Optimization of existing flood control and recharge facilities • Reduced risk to property and life • Reduced flood insurance costs • Increased recharge of groundwater basins for supply and storage • Increased supply of sediment for other uses in Region	None identified	• Increased supply of sediment for other uses outside of Region