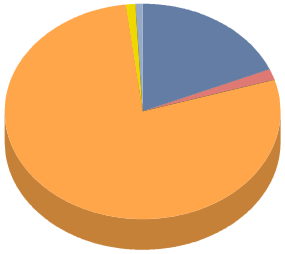
Analysis Report

for

Reno Agriculture



Land cover in acres and percentages

Arid & Semi-Arid Rangeland: Sagebrush: Ground cover 30% - 70%	253.4	18.6%
Impervious Surfaces: Paved: Drain to sewer	24.3	1.8%
Impervious Surfaces: Unpaved: Dirt	0.0	0.0%
Open Space - Grass/Scattered Trees: Grass cover > 75%	1,056.4	77.6%
Trees: Grass/turf understory: Ground cover > 75%	15.3	1.1%
Trees: Impervious understory	0.2	0.0%
Water Area	11.1	0.8%
Total:	1,360.7	100.0%

Tree Canopy: 15.5 acres (1.1%)

Air Pollution Removal

By absorbing and filtering out nitrogen dioxide (NO2), sulfur dioxide (SO2), ozone (O3), carbon monoxide (CO), and particulate matter less than 10 microns (PM10), trees perform a vital air cleaning service that directly affects the well-being of urban dwellers. CITYgreen estimates the annual air pollution removal rate of trees within a defined study area for these five pollutants based on research conducted by David Nowak, PhD, of the U.S. Forest Service. Economists use “externality” costs, or indirect costs borne by society such as rising health care expenditures and reduced tourism revenue to determine the dollar value of air pollutant removal. The externality costs used in CITYgreen are set by each state’s Public Services Commission.

Nearest Air Quality Reference City: ***Salt Lake City***

	Lbs. Removed/yr	Dollar Value/yr
Carbon Monoxide:	42	20
Ozone:	415	$1,466
Nitrogen Dioxide:	221	$782
Particulate Matter:	719	$1,697
Sulfur Dioxide:	69	$60
Totals:	**1,466**	**4,025**

Dollar values are based on 2009 dollars

Carbon Storage and Sequestration

Trees remove carbon dioxide from the air through their leaves and store carbon in their biomass. Approximately half of a tree’s dry weight is carbon. For this reason, large-scale tree planting projects are recognized as a legitimate tool in many national carbon-reduction programs. CITYgreen estimates the carbon storage capacity and sequestration rates of trees within a defined study area. The carbon storage and sequestration model was developed using research conducted by David Nowak, E. Gregory McPherson, and Rowan Rowntree of the U.S. Forest Service.

Tons Stored **(Total)**:	**668**
Tons Sequestered **(Annually)**:	**5**

Analysis Report

for

Reno Agriculture

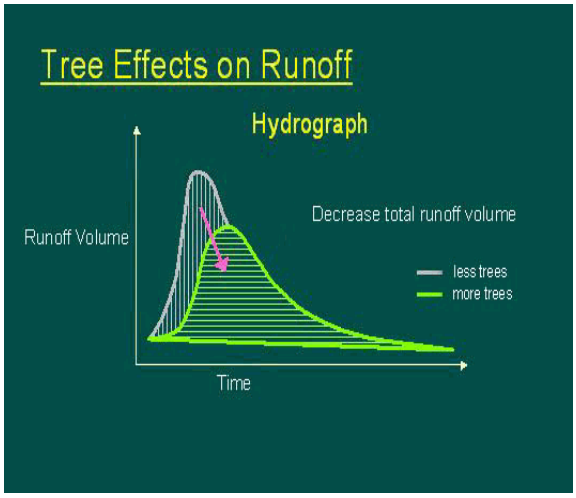
Stormwater Management

Water Quantity (Runoff Volume)

Trees decrease total runoff volume, helping cities to decrease their stormwater management costs. CITYgreen calculates the volume of runoff in a 2-year 24-hour storm event that would need to be contained if all trees were removed. To do this, CITYgreen uses a model developed by the Natural Resources Conservation Service (NRCS) called TR-55, based on a system of curve numbers. Curve numbers are an index of potential runoff within a specified drainage area. Curve numbers range from 30 to 100, with a higher number indicating greater runoff potential.

CITYgreen calculates two curve numbers for the stormwater analysis: one reflecting existing land cover conditions and the other reflecting the replacement of tree canopy in the study area by a user-defined replacement land cover (specified in the CITYgreen Preferences.) The difference in curve numbers and local rainfall determine the change in storage volume between the two different land cover scenarios (with and without trees). To determine the dollar amount of stormwater-related savings resulting from tree canopy, this calculated volume is then multiplied by the user-specified local construction cost.

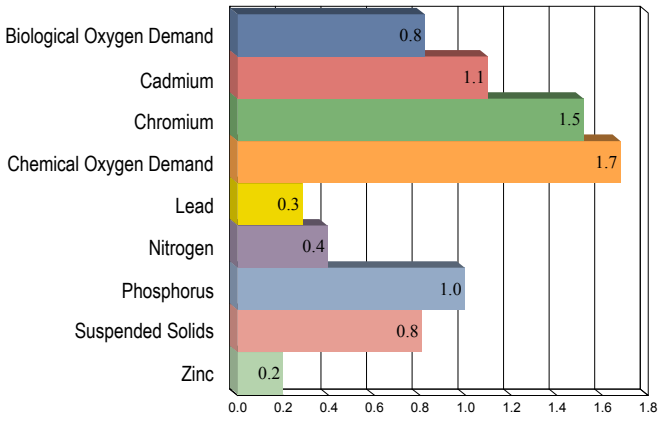
2-yr, 24-hr Rainfall in inches:	2.50
Curve Number reflecting existing conditions:	73
Curve Number of replacement land cover:	73
Dominant soil type:	**C**
Replacement land cover type: (existing condition)	
Urban: Western Desert: Natural Landscaping	
Additional cu. ft. storage needed:	**25,866**
Construction cost per cu. ft.:	$3.00
Total Stormwater Value:	**$77,597**
Annual Stormwater Value: (based on 20-year financing at 6% interest)	**$6,765**



Water Quality (Contaminant Loading)

Trees filter surface water and prevent erosion, both of which maintain or improve water quality. American Forests developed the CITYgreen water quality model using data from the US Environmental Protection Agency (EPA) and Purdue University's L-Thia spreadsheet water quality model. The water quality model estimates the change in the concentration of pollutants in runoff during a typical storm event, by replacing the tree canopy in a specified study area with the user-defined replacement land cover (specified in the CITYgreen Preferences) and comparing the results. The model estimates the event mean concentrations of nitrogen, phosphorus, suspended solids, zinc, lead, cadmium, chromium, chemical oxygen demand (COD), and biological oxygen demand (BOD).

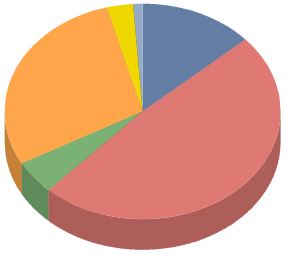
Percent change in contaminant loadings



Analysis Report

for

Reno Commercial



Land cover in acres and percentages

Arid & Semi-Arid Rangeland: Sagebrush: Ground cover 30% - 70%	1,135.7	13.2%
Impervious Surfaces: Paved: Drain to sewer	4,195.6	48.8%
Impervious Surfaces: Unpaved: Dirt	420.6	4.9%
Open Space - Grass/Scattered Trees: Grass cover > 75%	2,488.9	29.0%
Trees: Grass/turf understory: Ground cover > 75%	255.5	3.0%
Trees: Impervious understory	1.5	0.0%
Water Area	97.1	1.1%
Total:	8,594.9	100.0%

Tree Canopy: 257.0 acres (3.0%)

Air Pollution Removal

By absorbing and filtering out nitrogen dioxide (NO2), sulfur dioxide (SO2), ozone (O3), carbon monoxide (CO), and particulate matter less than 10 microns (PM10), trees perform a vital air cleaning service that directly affects the well-being of urban dwellers. CITYgreen estimates the annual air pollution removal rate of trees within a defined study area for these five pollutants based on research conducted by David Nowak, PhD, of the U.S. Forest Service. Economists use “externality” costs, or indirect costs borne by society such as rising health care expenditures and reduced tourism revenue to determine the dollar value of air pollutant removal. The externality costs used in CITYgreen are set by each state’s Public Services Commission.

Nearest Air Quality Reference City: ***Salt Lake City***

	Lbs. Removed/yr	Dollar Value/yr
Carbon Monoxide:	687	337
Ozone:	6,873	$24,281
Nitrogen Dioxide:	3,665	$12,950
Particulate Matter:	11,913	$28,100
Sulfur Dioxide:	1,145	$989
Totals:	**24,283**	**66,657**

Dollar values are based on 2009 dollars

Carbon Storage and Sequestration

Trees remove carbon dioxide from the air through their leaves and store carbon in their biomass. Approximately half of a tree’s dry weight is carbon. For this reason, large-scale tree planting projects are recognized as a legitimate tool in many national carbon-reduction programs. CITYgreen estimates the carbon storage capacity and sequestration rates of trees within a defined study area. The carbon storage and sequestration model was developed using research conducted by David Nowak, E. Gregory McPherson, and Rowan Rowntree of the U.S. Forest Service.

Tons Stored **(Total)**:	**11,059**
Tons Sequestered **(Annually)**:	**86**

Analysis Report

for

Reno Commercial

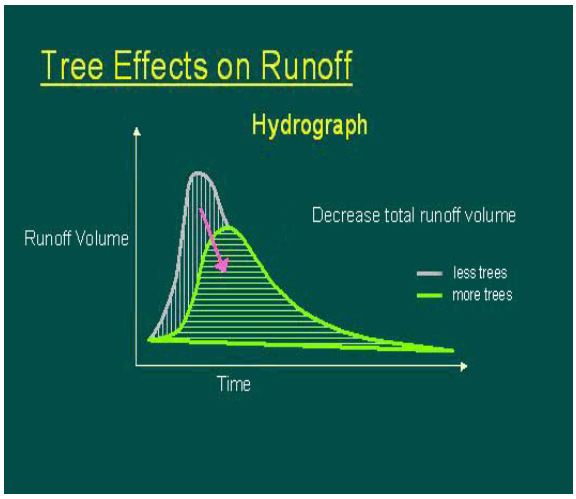
Stormwater Management

Water Quantity (Runoff Volume)

Trees decrease total runoff volume, helping cities to decrease their stormwater management costs. CITYgreen calculates the volume of runoff in a 2-year 24-hour storm event that would need to be contained if all trees were removed. To do this, CITYgreen uses a model developed by the Natural Resources Conservation Service (NRCS) called TR-55, based on a system of curve numbers. Curve numbers are an index of potential runoff within a specified drainage area. Curve numbers range from 30 to 100, with a higher number indicating greater runoff potential.

CITYgreen calculates two curve numbers for the stormwater analysis: one reflecting existing land cover conditions and the other reflecting the replacement of tree canopy in the study area by a user-defined replacement land cover (specified in the CITYgreen Preferences.) The difference in curve numbers and local rainfall determine the change in storage volume between the two different land cover scenarios (with and without trees). To determine the dollar amount of stormwater-related savings resulting from tree canopy, this calculated volume is then multiplied by the user-specified local construction cost.

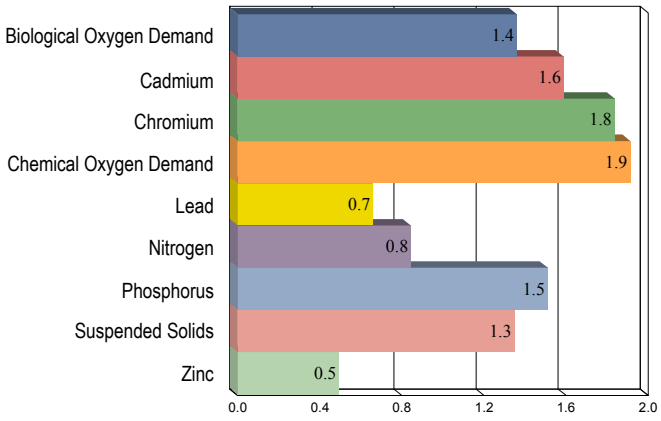
2-yr, 24-hr Rainfall in inches:	2.50
Curve Number reflecting existing conditions:	85
Curve Number of replacement land cover:	86
Dominant soil type:	**C**
Replacement land cover type: (existing condition)	
Urban: Western Desert: Natural Landscaping	
Additional cu. ft. storage needed:	**790,310**
Construction cost per cu. ft.:	$3.00
Total Stormwater Value:	**$2,370,930**
Annual Stormwater Value: (based on 20-year financing at 6% interest)	**$206,709**



Water Quality (Contaminant Loading)

Trees filter surface water and prevent erosion, both of which maintain or improve water quality. American Forests developed the CITYgreen water quality model using data from the US Environmental Protection Agency (EPA) and Purdue University's L-Thia spreadsheet water quality model. The water quality model estimates the change in the concentration of pollutants in runoff during a typical storm event, by replacing the tree canopy in a specified study area with the user-defined replacement land cover (specified in the CITYgreen Preferences) and comparing the results. The model estimates the event mean concentrations of nitrogen, phosphorus, suspended solids, zinc, lead, cadmium, chromium, chemical oxygen demand (COD), and biological oxygen demand (BOD).

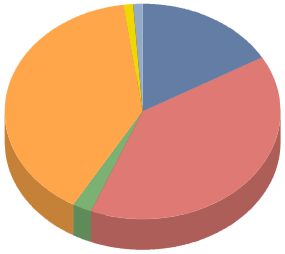
Percent change in contaminant loadings



Analysis Report

for

Reno Industrial



Land cover in acres and percentages

Arid & Semi-Arid Rangeland: Sagebrush: Ground cover 30% - 70%	947.1	16.6%
Impervious Surfaces: Paved: Drain to sewer	2,243.4	39.4%
Impervious Surfaces: Unpaved: Dirt	131.4	2.3%
Open Space - Grass/Scattered Trees: Grass cover > 75%	2,239.5	39.3%
Trees: Grass/turf understory: Ground cover > 75%	75.5	1.3%
Trees: Impervious understory	0.2	0.0%
Water Area	56.3	1.0%
Total:	5,693.4	100.0%

Tree Canopy: 75.7 acres (1.3%)

Air Pollution Removal

By absorbing and filtering out nitrogen dioxide (NO2), sulfur dioxide (SO2), ozone (O3), carbon monoxide (CO), and particulate matter less than 10 microns (PM10), trees perform a vital air cleaning service that directly affects the well-being of urban dwellers. CITYgreen estimates the annual air pollution removal rate of trees within a defined study area for these five pollutants based on research conducted by David Nowak, PhD, of the U.S. Forest Service. Economists use “externality” costs, or indirect costs borne by society such as rising health care expenditures and reduced tourism revenue to determine the dollar value of air pollutant removal. The externality costs used in CITYgreen are set by each state’s Public Services Commission.

Nearest Air Quality Reference City: ***Salt Lake City***

	Lbs. Removed/yr	Dollar Value/yr
Carbon Monoxide:	202	99
Ozone:	2,024	$7,150
Nitrogen Dioxide:	1,079	$3,813
Particulate Matter:	3,508	$8,274
Sulfur Dioxide:	337	$291
Totals:	**7,150**	**19,627**

Dollar values are based on 2009 dollars

Carbon Storage and Sequestration

Trees remove carbon dioxide from the air through their leaves and store carbon in their biomass. Approximately half of a tree’s dry weight is carbon. For this reason, large-scale tree planting projects are recognized as a legitimate tool in many national carbon-reduction programs. CITYgreen estimates the carbon storage capacity and sequestration rates of trees within a defined study area. The carbon storage and sequestration model was developed using research conducted by David Nowak, E. Gregory McPherson, and Rowan Rowntree of the U.S. Forest Service.

Tons Stored **(Total)**:	**3,256**
Tons Sequestered **(Annually)**:	**25**

Analysis Report

for

Reno Industrial

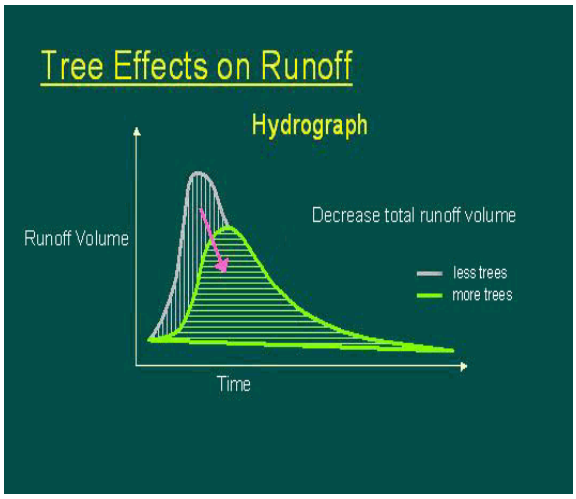
Stormwater Management

Water Quantity (Runoff Volume)

Trees decrease total runoff volume, helping cities to decrease their stormwater management costs. CITYgreen calculates the volume of runoff in a 2-year 24-hour storm event that would need to be contained if all trees were removed. To do this, CITYgreen uses a model developed by the Natural Resources Conservation Service (NRCS) called TR-55, based on a system of curve numbers. Curve numbers are an index of potential runoff within a specified drainage area. Curve numbers range from 30 to 100, with a higher number indicating greater runoff potential.

CITYgreen calculates two curve numbers for the stormwater analysis: one reflecting existing land cover conditions and the other reflecting the replacement of tree canopy in the study area by a user-defined replacement land cover (specified in the CITYgreen Preferences.) The difference in curve numbers and local rainfall determine the change in storage volume between the two different land cover scenarios (with and without trees). To determine the dollar amount of stormwater-related savings resulting from tree canopy, this calculated volume is then multiplied by the user-specified local construction cost.

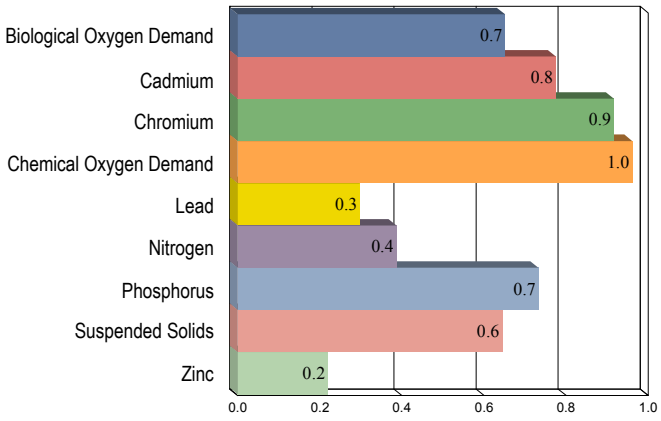
2-yr, 24-hr Rainfall in inches:	2.50
Curve Number reflecting existing conditions:	82
Curve Number of replacement land cover:	82
Dominant soil type:	**C**
Replacement land cover type: (existing condition)	
Urban: Western Desert: Natural Landscaping	
Additional cu. ft. storage needed:	**198,660**
Construction cost per cu. ft.:	$3.00
Total Stormwater Value:	**$595,980**
Annual Stormwater Value: (based on 20-year financing at 6% interest)	**$51,960**



Water Quality (Contaminant Loading)

Trees filter surface water and prevent erosion, both of which maintain or improve water quality. American Forests developed the CITYgreen water quality model using data from the US Environmental Protection Agency (EPA) and Purdue University's L-Thia spreadsheet water quality model. The water quality model estimates the change in the concentration of pollutants in runoff during a typical storm event, by replacing the tree canopy in a specified study area with the user-defined replacement land cover (specified in the CITYgreen Preferences) and comparing the results. The model estimates the event mean concentrations of nitrogen, phosphorus, suspended solids, zinc, lead, cadmium, chromium, chemical oxygen demand (COD), and biological oxygen demand (BOD).

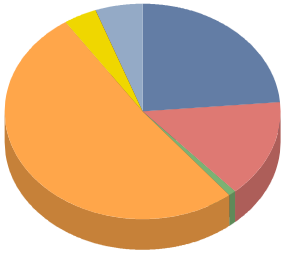
Percent change in contaminant loadings



Analysis Report

for

Reno Public



Land cover in acres and percentages

Arid & Semi-Arid Rangeland: Sagebrush: Ground cover 30% - 70%	467.8	23.7%
Impervious Surfaces: Paved: Drain to sewer	288.3	14.6%
Impervious Surfaces: Unpaved: Dirt	14.2	0.7%
Open Space - Grass/Scattered Trees: Grass cover > 75%	1,012.0	51.4%
Trees: Grass/turf understory: Ground cover > 75%	76.1	3.9%
Trees: Impervious understory	1.3	0.1%
Water Area	110.9	5.6%
Total:	1,970.5	100.0%

Tree Canopy: 77.3 acres (3.9%)

Air Pollution Removal

By absorbing and filtering out nitrogen dioxide (NO2), sulfur dioxide (SO2), ozone (O3), carbon monoxide (CO), and particulate matter less than 10 microns (PM10), trees perform a vital air cleaning service that directly affects the well-being of urban dwellers. CITYgreen estimates the annual air pollution removal rate of trees within a defined study area for these five pollutants based on research conducted by David Nowak, PhD, of the U.S. Forest Service. Economists use “externality” costs, or indirect costs borne by society such as rising health care expenditures and reduced tourism revenue to determine the dollar value of air pollutant removal. The externality costs used in CITYgreen are set by each state’s Public Services Commission.

Nearest Air Quality Reference City: ***Salt Lake City***

	Lbs. Removed/yr	Dollar Value/yr
Carbon Monoxide:	207	102
Ozone:	2,068	$7,308
Nitrogen Dioxide:	1,103	$3,897
Particulate Matter:	3,585	$8,457
Sulfur Dioxide:	345	$298
Totals:	**7,308**	**20,061**

Dollar values are based on 2009 dollars

Carbon Storage and Sequestration

Trees remove carbon dioxide from the air through their leaves and store carbon in their biomass. Approximately half of a tree’s dry weight is carbon. For this reason, large-scale tree planting projects are recognized as a legitimate tool in many national carbon-reduction programs. CITYgreen estimates the carbon storage capacity and sequestration rates of trees within a defined study area. The carbon storage and sequestration model was developed using research conducted by David Nowak, E. Gregory McPherson, and Rowan Rowntree of the U.S. Forest Service.

Tons Stored **(Total)**:	**3,328**
Tons Sequestered **(Annually)**:	**26**

Analysis Report

for

Reno Public

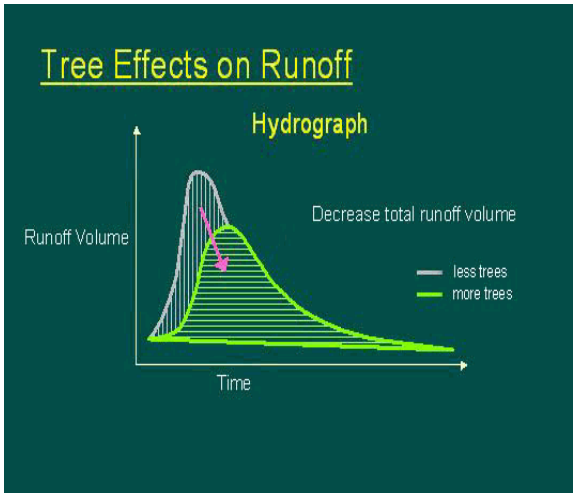
Stormwater Management

Water Quantity (Runoff Volume)

Trees decrease total runoff volume, helping cities to decrease their stormwater management costs. CITYgreen calculates the volume of runoff in a 2-year 24-hour storm event that would need to be contained if all trees were removed. To do this, CITYgreen uses a model developed by the Natural Resources Conservation Service (NRCS) called TR-55, based on a system of curve numbers. Curve numbers are an index of potential runoff within a specified drainage area. Curve numbers range from 30 to 100, with a higher number indicating greater runoff potential.

CITYgreen calculates two curve numbers for the stormwater analysis: one reflecting existing land cover conditions and the other reflecting the replacement of tree canopy in the study area by a user-defined replacement land cover (specified in the CITYgreen Preferences.) The difference in curve numbers and local rainfall determine the change in storage volume between the two different land cover scenarios (with and without trees). To determine the dollar amount of stormwater-related savings resulting from tree canopy, this calculated volume is then multiplied by the user-specified local construction cost.

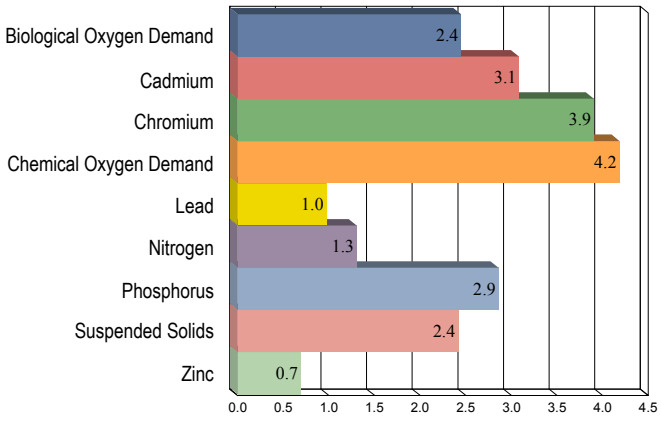
2-yr, 24-hr Rainfall in inches:	2.50
Curve Number reflecting existing conditions:	76
Curve Number of replacement land cover:	77
Dominant soil type:	**C**
Replacement land cover type: (existing condition)	
Urban: Western Desert: Natural Landscaping	
Additional cu. ft. storage needed:	**162,162**
Construction cost per cu. ft.:	$3.00
Total Stormwater Value:	**$486,486**
Annual Stormwater Value: (based on 20-year financing at 6% interest)	**$42,414**



Water Quality (Contaminant Loading)

Trees filter surface water and prevent erosion, both of which maintain or improve water quality. American Forests developed the CITYgreen water quality model using data from the US Environmental Protection Agency (EPA) and Purdue University's L-Thia spreadsheet water quality model. The water quality model estimates the change in the concentration of pollutants in runoff during a typical storm event, by replacing the tree canopy in a specified study area with the user-defined replacement land cover (specified in the CITYgreen Preferences) and comparing the results. The model estimates the event mean concentrations of nitrogen, phosphorus, suspended solids, zinc, lead, cadmium, chromium, chemical oxygen demand (COD), and biological oxygen demand (BOD).

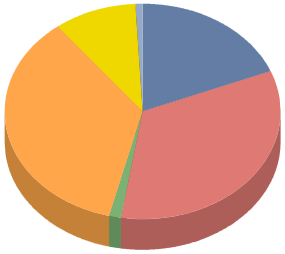
Percent change in contaminant loadings



Analysis Report

for

Reno Residential



Land cover in acres and percentages

Arid & Semi-Arid Rangeland: Sagebrush: Ground cover 30% - 70%	3,713.8	19.0%
Impervious Surfaces: Paved: Drain to sewer	6,573.2	33.6%
Impervious Surfaces: Unpaved: Dirt	220.8	1.1%
Open Space - Grass/Scattered Trees: Grass cover > 75%	6,982.1	35.7%
Trees: Grass/turf understory: Ground cover > 75%	1,868.4	9.6%
Trees: Impervious understory	14.7	0.1%
Water Area	172.4	0.9%
Total:	19,545.4	100.0%

Tree Canopy: 1,883.2 acres (9.6%)

Air Pollution Removal

By absorbing and filtering out nitrogen dioxide (NO2), sulfur dioxide (SO2), ozone (O3), carbon monoxide (CO), and particulate matter less than 10 microns (PM10), trees perform a vital air cleaning service that directly affects the well-being of urban dwellers. CITYgreen estimates the annual air pollution removal rate of trees within a defined study area for these five pollutants based on research conducted by David Nowak, PhD, of the U.S. Forest Service. Economists use “externality” costs, or indirect costs borne by society such as rising health care expenditures and reduced tourism revenue to determine the dollar value of air pollutant removal. The externality costs used in CITYgreen are set by each state’s Public Services Commission.

Nearest Air Quality Reference City: ***Salt Lake City***

	Lbs. Removed/yr	Dollar Value/yr
Carbon Monoxide:	5,036	2,472
Ozone:	50,361	$177,927
Nitrogen Dioxide:	26,859	$94,894
Particulate Matter:	87,292	$205,908
Sulfur Dioxide:	8,393	$7,244
Totals:	**177,941**	**488,444**

Dollar values are based on 2009 dollars

Carbon Storage and Sequestration

Trees remove carbon dioxide from the air through their leaves and store carbon in their biomass. Approximately half of a tree’s dry weight is carbon. For this reason, large-scale tree planting projects are recognized as a legitimate tool in many national carbon-reduction programs. CITYgreen estimates the carbon storage capacity and sequestration rates of trees within a defined study area. The carbon storage and sequestration model was developed using research conducted by David Nowak, E. Gregory McPherson, and Rowan Rowntree of the U.S. Forest Service.

Tons Stored **(Total)**:	**81,036**
Tons Sequestered **(Annually)**:	**631**

Analysis Report

for

Reno Residential

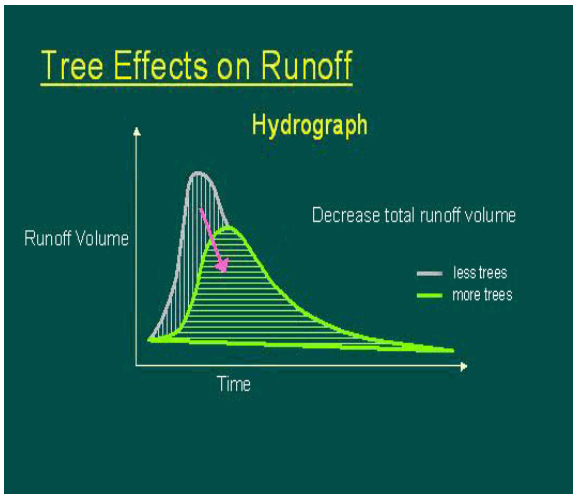
Stormwater Management

Water Quantity (Runoff Volume)

Trees decrease total runoff volume, helping cities to decrease their stormwater management costs. CITYgreen calculates the volume of runoff in a 2-year 24-hour storm event that would need to be contained if all trees were removed. To do this, CITYgreen uses a model developed by the Natural Resources Conservation Service (NRCS) called TR-55, based on a system of curve numbers. Curve numbers are an index of potential runoff within a specified drainage area. Curve numbers range from 30 to 100, with a higher number indicating greater runoff potential.

CITYgreen calculates two curve numbers for the stormwater analysis: one reflecting existing land cover conditions and the other reflecting the replacement of tree canopy in the study area by a user-defined replacement land cover (specified in the CITYgreen Preferences.) The difference in curve numbers and local rainfall determine the change in storage volume between the two different land cover scenarios (with and without trees). To determine the dollar amount of stormwater-related savings resulting from tree canopy, this calculated volume is then multiplied by the user-specified local construction cost.

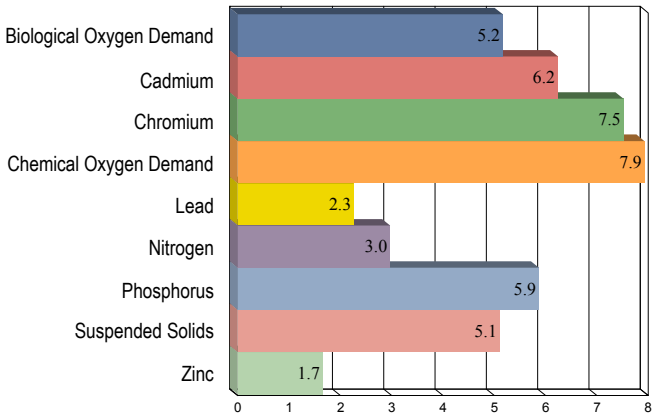
2-yr, 24-hr Rainfall in inches:	2.50
Curve Number reflecting existing conditions:	80
Curve Number of replacement land cover:	81
Dominant soil type: **C**	
Replacement land cover type: (existing condition)	
Urban: Western Desert: Natural Landscaping	
Additional cu. ft. storage needed:	**4,744,564**
Construction cost per cu. ft.:	$3.00
Total Stormwater Value:	**$14,233,691**
Annual Stormwater Value: (based on 20-year financing at 6% interest)	**$1,240,958**



Water Quality (Contaminant Loading)

Trees filter surface water and prevent erosion, both of which maintain or improve water quality. American Forests developed the CITYgreen water quality model using data from the US Environmental Protection Agency (EPA) and Purdue University's L-Thia spreadsheet water quality model. The water quality model estimates the change in the concentration of pollutants in runoff during a typical storm event, by replacing the tree canopy in a specified study area with the user-defined replacement land cover (specified in the CITYgreen Preferences) and comparing the results. The model estimates the event mean concentrations of nitrogen, phosphorus, suspended solids, zinc, lead, cadmium, chromium, chemical oxygen demand (COD), and biological oxygen demand (BOD).

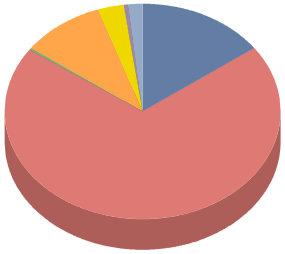
Percent change in contaminant loadings



Analysis Report

for

Reno Right of Way



Land cover in acres and percentages

Arid & Semi-Arid Rangeland: Sagebrush: Ground cover 30% - 70%	1,126.5	14.9%
Impervious Surfaces: Paved: Drain to sewer	5,278.2	69.7%
Impervious Surfaces: Unpaved: Dirt	17.9	0.2%
Open Space - Grass/Scattered Trees: Grass cover > 75%	740.9	9.8%
Trees: Grass/turf understory: Ground cover > 75%	237.2	3.1%
Trees: Impervious understory	38.4	0.5%
Water Area	128.8	1.7%
Total:	7,567.8	100.0%

Tree Canopy: 275.6 acres (3.6%)

Air Pollution Removal

By absorbing and filtering out nitrogen dioxide (NO2), sulfur dioxide (SO2), ozone (O3), carbon monoxide (CO), and particulate matter less than 10 microns (PM10), trees perform a vital air cleaning service that directly affects the well-being of urban dwellers. CITYgreen estimates the annual air pollution removal rate of trees within a defined study area for these five pollutants based on research conducted by David Nowak, PhD, of the U.S. Forest Service. Economists use “externality” costs, or indirect costs borne by society such as rising health care expenditures and reduced tourism revenue to determine the dollar value of air pollutant removal. The externality costs used in CITYgreen are set by each state’s Public Services Commission.

Nearest Air Quality Reference City: ***Salt Lake City***

	Lbs. Removed/yr	Dollar Value/yr
Carbon Monoxide:	737	362
Ozone:	7,370	$26,037
Nitrogen Dioxide:	3,930	$13,886
Particulate Matter:	12,774	$30,132
Sulfur Dioxide:	1,228	$1,060
Totals:	**26,039**	**71,477**

Dollar values are based on 2009 dollars

Carbon Storage and Sequestration

Trees remove carbon dioxide from the air through their leaves and store carbon in their biomass. Approximately half of a tree’s dry weight is carbon. For this reason, large-scale tree planting projects are recognized as a legitimate tool in many national carbon-reduction programs. CITYgreen estimates the carbon storage capacity and sequestration rates of trees within a defined study area. The carbon storage and sequestration model was developed using research conducted by David Nowak, E. Gregory McPherson, and Rowan Rowntree of the U.S. Forest Service.

Tons Stored **(Total)**:	**11,859**
Tons Sequestered **(Annually)**:	**92**

Analysis Report

for

Reno Right of Way

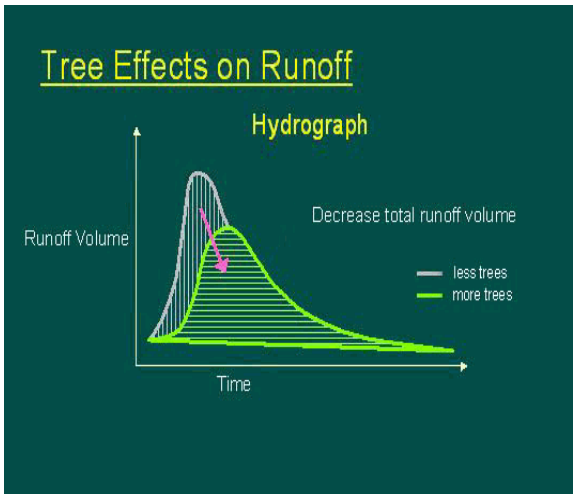
Stormwater Management

Water Quantity (Runoff Volume)

Trees decrease total runoff volume, helping cities to decrease their stormwater management costs. CITYgreen calculates the volume of runoff in a 2-year 24-hour storm event that would need to be contained if all trees were removed. To do this, CITYgreen uses a model developed by the Natural Resources Conservation Service (NRCS) called TR-55, based on a system of curve numbers. Curve numbers are an index of potential runoff within a specified drainage area. Curve numbers range from 30 to 100, with a higher number indicating greater runoff potential.

CITYgreen calculates two curve numbers for the stormwater analysis: one reflecting existing land cover conditions and the other reflecting the replacement of tree canopy in the study area by a user-defined replacement land cover (specified in the CITYgreen Preferences.) The difference in curve numbers and local rainfall determine the change in storage volume between the two different land cover scenarios (with and without trees). To determine the dollar amount of stormwater-related savings resulting from tree canopy, this calculated volume is then multiplied by the user-specified local construction cost.

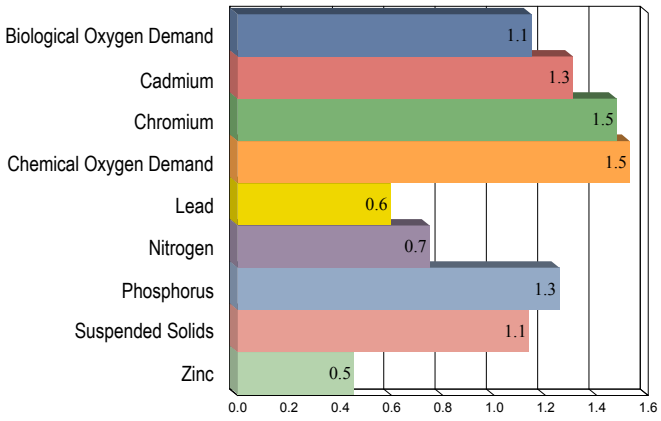
2-yr, 24-hr Rainfall in inches:	2.50
Curve Number reflecting existing conditions:	90
Curve Number of replacement land cover:	90
Dominant soil type:	**C**
Replacement land cover type: (existing condition)	
Urban: Western Desert: Natural Landscaping	
Additional cu. ft. storage needed:	**804,322**
Construction cost per cu. ft.:	$3.00
Total Stormwater Value:	**$2,412,967**
Annual Stormwater Value: (based on 20-year financing at 6% interest)	**$210,373**



Water Quality (Contaminant Loading)

Trees filter surface water and prevent erosion, both of which maintain or improve water quality. American Forests developed the CITYgreen water quality model using data from the US Environmental Protection Agency (EPA) and Purdue University's L-Thia spreadsheet water quality model. The water quality model estimates the change in the concentration of pollutants in runoff during a typical storm event, by replacing the tree canopy in a specified study area with the user-defined replacement land cover (specified in the CITYgreen Preferences) and comparing the results. The model estimates the event mean concentrations of nitrogen, phosphorus, suspended solids, zinc, lead, cadmium, chromium, chemical oxygen demand (COD), and biological oxygen demand (BOD).

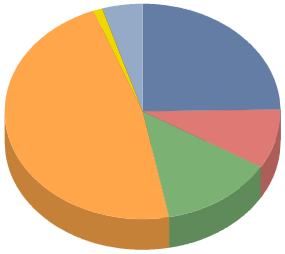
Percent change in contaminant loadings



Analysis Report

for

Reno Vacant



Land cover in acres and percentages

Arid & Semi-Arid Rangeland: Sagebrush: Ground cover 30% - 70%	1,840.6	24.6%
Impervious Surfaces: Paved: Drain to sewer	670.1	9.0%
Impervious Surfaces: Unpaved: Dirt	1,004.3	13.4%
Open Space - Grass/Scattered Trees: Grass cover > 75%	3,535.8	47.3%
Trees: Grass/turf understory: Ground cover > 75%	71.8	1.0%
Trees: Impervious understory	0.7	0.0%
Water Area	356.3	4.8%
Total:	7,479.6	100.0%

Tree Canopy: 72.5 acres (1.0%)

Air Pollution Removal

By absorbing and filtering out nitrogen dioxide (NO2), sulfur dioxide (SO2), ozone (O3), carbon monoxide (CO), and particulate matter less than 10 microns (PM10), trees perform a vital air cleaning service that directly affects the well-being of urban dwellers. CITYgreen estimates the annual air pollution removal rate of trees within a defined study area for these five pollutants based on research conducted by David Nowak, PhD, of the U.S. Forest Service. Economists use “externality” costs, or indirect costs borne by society such as rising health care expenditures and reduced tourism revenue to determine the dollar value of air pollutant removal. The externality costs used in CITYgreen are set by each state’s Public Services Commission.

Nearest Air Quality Reference City: ***Salt Lake City***

	Lbs. Removed/yr	Dollar Value/yr
Carbon Monoxide:	194	95
Ozone:	1,940	$6,853
Nitrogen Dioxide:	1,034	$3,655
Particulate Matter:	3,362	$7,930
Sulfur Dioxide:	323	$279
Totals:	**6,853**	**18,812**

Dollar values are based on 2009 dollars

Carbon Storage and Sequestration

Trees remove carbon dioxide from the air through their leaves and store carbon in their biomass. Approximately half of a tree’s dry weight is carbon. For this reason, large-scale tree planting projects are recognized as a legitimate tool in many national carbon-reduction programs. CITYgreen estimates the carbon storage capacity and sequestration rates of trees within a defined study area. The carbon storage and sequestration model was developed using research conducted by David Nowak, E. Gregory McPherson, and Rowan Rowntree of the U.S. Forest Service.

Tons Stored **(Total)**:	**3,121**
Tons Sequestered **(Annually)**:	**24**

Analysis Report

for

Reno Vacant

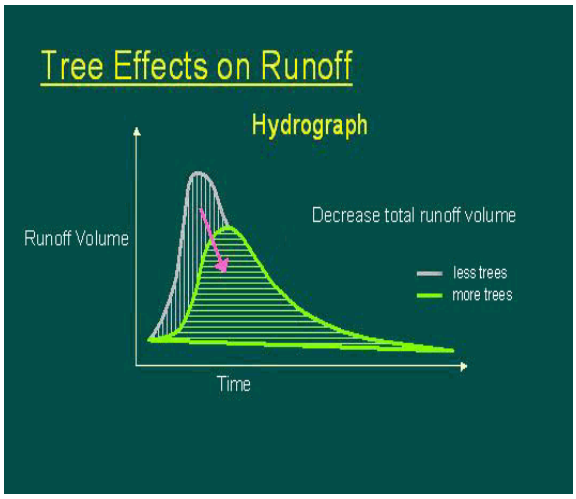
Stormwater Management

Water Quantity (Runoff Volume)

Trees decrease total runoff volume, helping cities to decrease their stormwater management costs. CITYgreen calculates the volume of runoff in a 2-year 24-hour storm event that would need to be contained if all trees were removed. To do this, CITYgreen uses a model developed by the Natural Resources Conservation Service (NRCS) called TR-55, based on a system of curve numbers. Curve numbers are an index of potential runoff within a specified drainage area. Curve numbers range from 30 to 100, with a higher number indicating greater runoff potential.

CITYgreen calculates two curve numbers for the stormwater analysis: one reflecting existing land cover conditions and the other reflecting the replacement of tree canopy in the study area by a user-defined replacement land cover (specified in the CITYgreen Preferences.) The difference in curve numbers and local rainfall determine the change in storage volume between the two different land cover scenarios (with and without trees). To determine the dollar amount of stormwater-related savings resulting from tree canopy, this calculated volume is then multiplied by the user-specified local construction cost.

2-yr, 24-hr Rainfall in inches:	2.50
Curve Number reflecting existing conditions:	76
Curve Number of replacement land cover:	77
Dominant soil type:	**C**
Replacement land cover type: (existing condition)	
Urban: Western Desert: Natural Landscaping	
Additional cu. ft. storage needed:	**152,548**
Construction cost per cu. ft.:	$3.00
Total Stormwater Value:	**$457,645**
Annual Stormwater Value: (based on 20-year financing at 6% interest)	**$39,900**



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Percent change in contaminant loadings