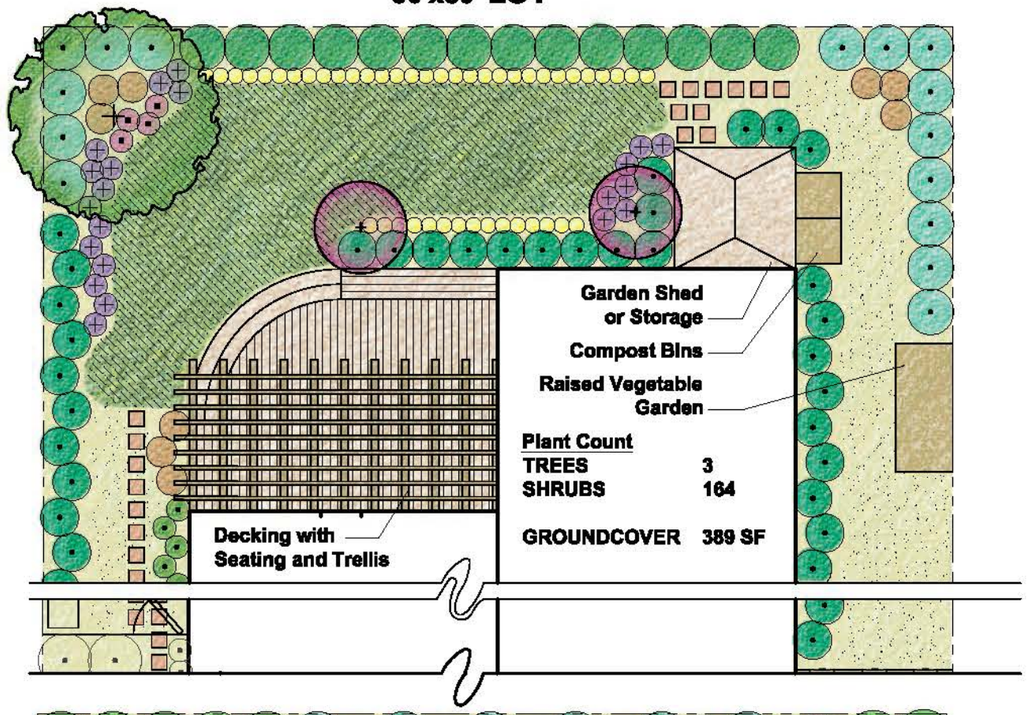
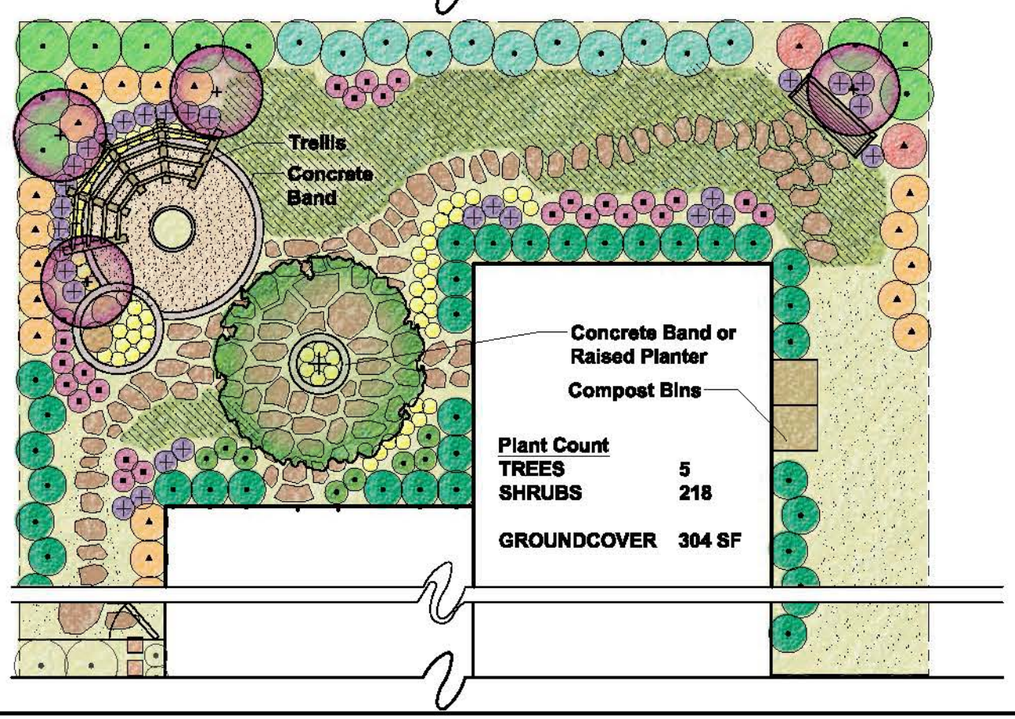
"TYPICAL" SIZED LOT HOUSE
NORTH FACING REAR GARDEN, TYPICAL

60'x80' LOT

RECREATION/ACTIVE

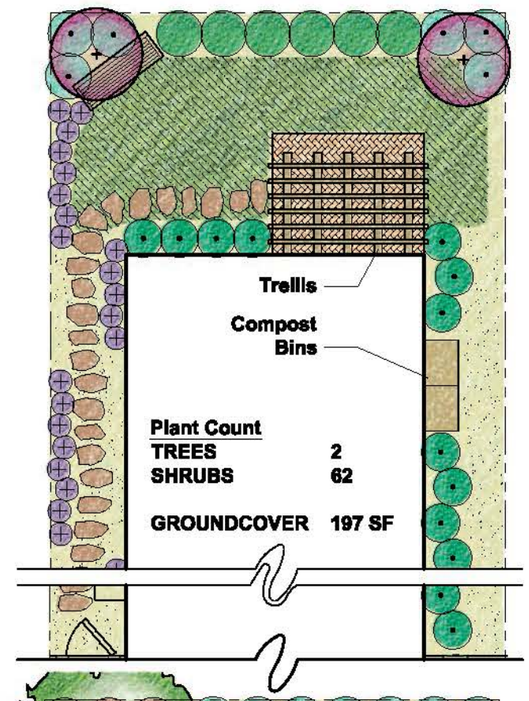


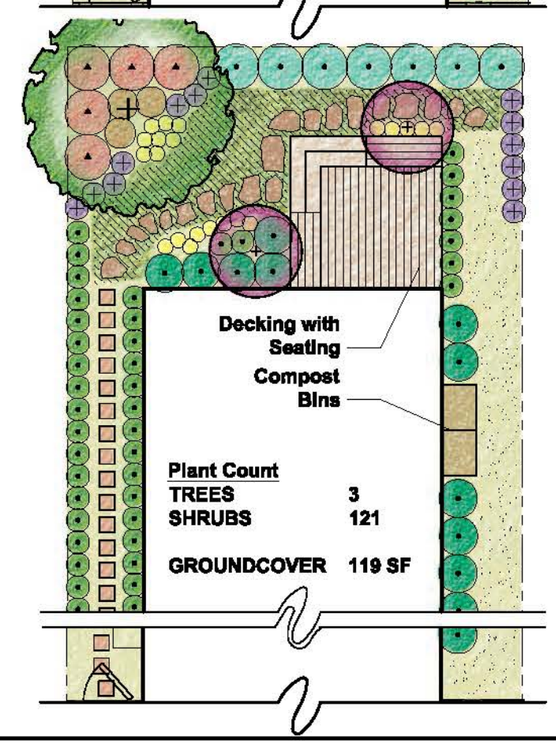
SOCIAL/PASSIVE



ZERO-LOT LINE HOUSE
NORTH FACING REAR GARDEN, TYPICAL

30'x80' LOT





Smart From the Start

SOUTHERN INLAND BACK YARD

June 2009

SAMPLE PLANT LEGEND

SYMBOL	BOTANICAL NAME	COMMON NAME
LARGE TREES		
	Jacaranda mimosifolia	Jacaranda
	Prunus 'Krauter Vesuvius'	Flowering Plum
	Quercus suber	Cork Oak
	Schinus molle	Pepper Tree
SMALL TREES		
	Cercis occidentalis	Redbud
	Cotinus coggygria	Smoke Tree
	Fremontodendron 'Dara's Gold'	Flannel Bush
LARGE SHRUBS		
	Myrtus communis	Myrtle
	Nerium o. 'Petite Salmon'	Oleander
	Cistus ladanifer	Crimson-spot Rockrose
	Salvia microphylla	Sage
MEDIUM SHRUBS		
	Berberis repens	Creeping Barberry
	Cholsya ternata 'Aztec Beauty'**	Mexican Orange
SMALL SHRUBS & PERRENIALS		
	Epilobium californica	California Fuchsia
	Carex 'Frosty Curls'	New Zealand Hair Sedge
	Nandina 'Fire Power'**	Heavenly Bamboo**
	Clarkia rubicunda	Clarkia
	Eschscholzia californica	California Poppy
GROUNDCOVER RECREATIONAL/ACTIVE		
	Carex praegracilis*	Sedge*
	Turf *	NCN*
GROUNDCOVER SOCIAL/PASSIVE		
	Arctostaphylos 'Emerald Carpet'	Emerald Carpet
	Cotoneaster dammeri*	Bearberry Cotoneaster*
	Rubus pentalobus*	Bramble*

HARDSCAPE

Pavers	Mulch or DG
Stepping Stones	Pea Gravel
Bench	Sand-set Brick

* Can tolerate light traffic
** Can tolerate shade

SUNSET ZONES - 20, 21

NORTH

0 5 10 20

1" = 10'-0"

Note: For additional information regarding design and installation, please see back yard template and CUWCC's Water Smart Landscape Checklist at www.cuwcc.org.

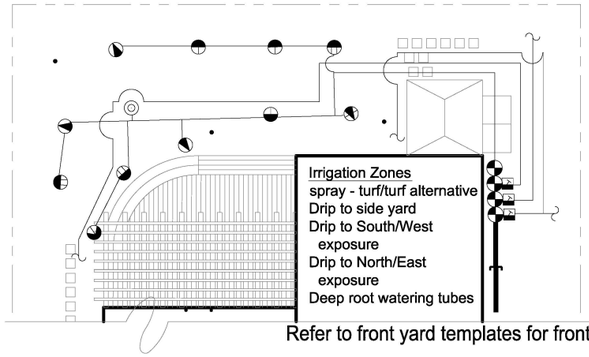
Funded by the U.S. Bureau of Reclamation, Lower Colorado Region, Southern California Office.

SOUTHERN INLAND BACK YARD

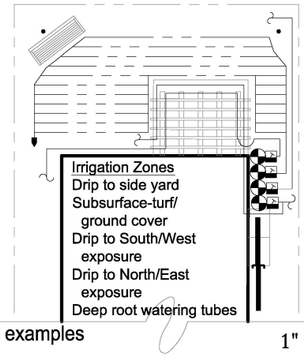
June 2009

RECREATION/ACTIVE

"TYPICAL" SIZED LOT HOUSE
NORTH FACING REAR GARDEN, TYPICAL



ZERO-LOT LINE HOUSE
NORTH FACING REAR GARDEN, TYPICAL



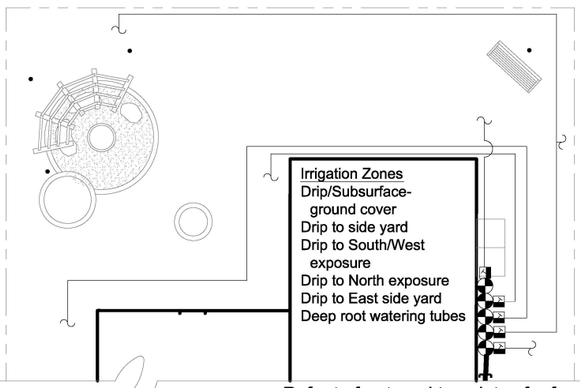
Refer to front yard templates for front yard examples

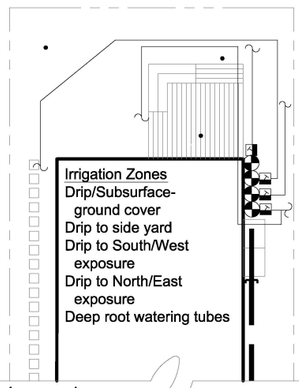
NORTH

0 8 16 32

1" = 16'-0"

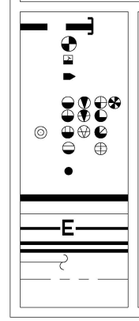
SOCIAL/PASSIVE





Refer to front yard templates for front yard examples

BACK YARD IRRIGATION SYSTEM LEGEND



Existing irrigation main stub-out- 1"	-Connect to stubout, station wires and common in valve box	
Remote Control Valves	-Below grade in valve box with 2 cu feet of gravel below	
Drip control assembly	-120 mesh filter and 40 psi regulator where psi is excessive	
Flush valve/air relief valve	-Manual ball valve and air relief valve as required	
6" Spray heads (12" from fence)	-Matched precip with check valves-12H,T,Q,ADJ	-12' radius
6" Spray heads (12" from fence)	-Matched precip with check valves-10H,T,Q	-10' radius
6" Spray heads (12" from fence)	-Matched precip with check valves-8F,H,T,Q	-8' radius
6" Spray heads (12" from fence)	-Matched precip with check valves-15SST,EST	-3' X 10'
Deep root watering tube	-Use 1 GPM bubbler as alternate to hand watering	
Irrigation main-1"	-1120/Schedule 40 PVC pipe	-18" cover
Irrigation lateral	-1120/Class 200 PVC pipe	-12" cover
Electrical conduit-1"	-1120/SCHEDULE 40 PVC PIPE	-24" cover
Sleeving-3"	-1120/Schedule 40 PVC pipe	-24" cover
To drip irrigation	-Point source or multi-outlet emitters	- 6" cover
Inline subsurface drip-1/2"	-LDPE with inline emitters 12" on center	- 4" cover

Typical Lot - Recreation	Estimated Water Use-Riverside													
Valves	SQ FT	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN GAL
Spray Turf	405	290	303	757	1,161	1,582	1,741	1,943	1,892	1,481	951	558	252	12,911
Spray Turf alternative	405	166	173	433	663	904	995	1,110	1,081	846	544	319	144	7,378
Drip GC	1195	285	298	744	1,142	1,556	1,712	1,911	1,861	1,457	936	548	248	12,698
TOTAL gallons with Turf	1600	576	601	1,501	2,302	3,138	3,453	3,854	3,754	2,938	1,887	1,106	500	25,609
TOTAL with Turf alternative	1600	451	471	1,177	1,805	2,460	2,707	3,021	2,943	2,303	1,479	867	392	20,076
Estimated water use with turf 25,609 gal/yr; MAWA = 39,633 gal/yr; projected water use = 65% of MAWA with turf														
Estimated water use with turf alternative 20,076 gal/yr; MAWA = 39,633 gal/yr; projected water use = 51% of MAWA with turf alternative														
Zero Lot - Recreation	Estimated Water Use-Riverside													
Valves	SQ FT	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN GAL
Subsurface- Turf	220	123	128	320	490	668	736	821	800	626	402	236	107	5,455
Subsurface- Turf alternative	220	70	73	183	280	382	420	469	457	358	230	135	61	3,117
Drip Shurbs	500	119	125	312	478	651	716	800	779	610	391	229	104	5,313
TOTAL with Turf	720	242	253	631	968	1,319	1,452	1,620	1,578	1,235	793	465	210	10,768
TOTAL with Turf alternative		189	198	494	758	1,033	1,137	1,269	1,236	967	621	364	165	8,430
Estimated water use with turf 10,768 gal/yr; MAWA = 17,835 gal/yr; projected water use = 60% of MAWA with turf														
Estimated water use with turf alternative 8,430 gal/yr; MAWA = 17,835 gal/yr; projected water use = 47% of MAWA with turf alternative														
Typical Lot Socail	Estimated Water Use-Riverside	0%												
Valves	SQ FT	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN GAL
Drip Ground Cover	935	223	233	583	893	1217	1340	1495	1456	1140	732	429	194	9,936
Drip shrubs	665	159	166	414	635	866	953	1,063	1,036	811	521	305	138	7,066
TOTAL	1600	382	399	997	1,528	2,083	2,293	2,558	2,492	1,950	1,253	734	332	17,002
Estimated water use 17,002 gal/yr; MAWA = 39,633 gal/yr; projected water use = 43% of MAWA														
Zero Lot - Social	Estimated Water Use-Riverside													
Valves	SQ FT	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN GAL
Drip GC	125	30	31	78	119	163	179	200	195	152	98	57	26	1,328
Drip shrubs	595	142	148	371	568	775	853	951	927	725	466	273	124	6,323
TOTAL	720	172	179	449	688	937	1,032	1,151	1,121	878	564	330	150	7,651
Estimated water use 7,651 gal/yr; MAWA =17,835 gal/yr; projected water use = 43% of MAWA														

PRECIP = Precipitation Rate is the application rate of irrigation in inches per hour
Assumed precips: Spray heads - 1.8, Drip - .4, subsurface drip - 1.1, Deep root watering -8
MAWA = Maximum Annual Water Allotment (in gallons and based upon 70% of area historical annual ET)
ETo=Reference evapotranspiration is the quantity of water evaporated from the soil and transpired by the planting and is measured in inches per month.
ANN GAL = Annual gallons
RUNTIME = Total amount of minutes required for planting root depth in native soil
CYC = Total number of repeat cycles required for native soil
CYC TIME = Rounded minutes of each cycle to be repeated by "CYC allowing infilitration monthly number = number of times/month to apply runtime (refer to example below)
BASE SCHEDULE for established plant material with historical weather data (10 year average) and assumed precips. Note, if low precipitation heads or mini rotors are used in lieu of conventional spray heads, then the base run times will need to be extended to provide water down to the planting root zones.
SPRAY HEAD: Spray head with one of the following: standard matched precipitation spray nozzles-1.8"/hr, low precipitation nozzles - 1"/hr, or mini rotor nozzles-0.4"/hr
During establishment period, root depth is shallower, thus requiring more frequent irrigation with shorter run times, stretching out the frequency and extending the total runtimes as the planting matures and roots penetrate into native soil conditions over a 3-5 year span. Establishment irrigation frequency depends upon the time of year initial planting takes place.

Monthly example:
The number under the month indicates the number of times that zone needs to be irrigated during that month. For fractions of runtimes per month, multiply the # of CYC by the decimal (example: drip/ground cover requires .6 runtimes per month of March = .6 X 7(# of CYC)= 4 cycles of 23 minutes each (CYC). This would equate to 92 minutes total runtime one time during the month of March.
Backyards: Refer to backyard design templates for both social and recreation layout ideas.
Note: Some plants respond better to overhead spray while many others do better with drip. The irrigation design will need not only to take into consideration plant preferences, but also runoff and potential blockage where the planting grows in front of the spray heads. Drip and spray are both shown on the templates to show differences in system costs and projected water use.
Also see front yard templates.