Rebuilding Landscapes

Permit Ready Front Yard Landscape Templates

A Project of the Sonoma -Marin Water Saving Partnership

ABLA

ForeSite
digital mapping solutions

SHERWOOD
DESIGN ENGINEERS

Equinox
LANDSCAPE

P D G
PANORAMIC DESIGN GROUP
LANDSCAPE ARCHITECTURE

daily acts
because every choice matters

Project Goals

- Streamline permitting
- Save homeowner cost
- Water saving designs
- Fire Safer designs
- Attractive front yard plans
- Integrate sustainability elements
- Restore neighborhood vitality and ecology
- Improve climate adaptability

Sustainable Design Elements

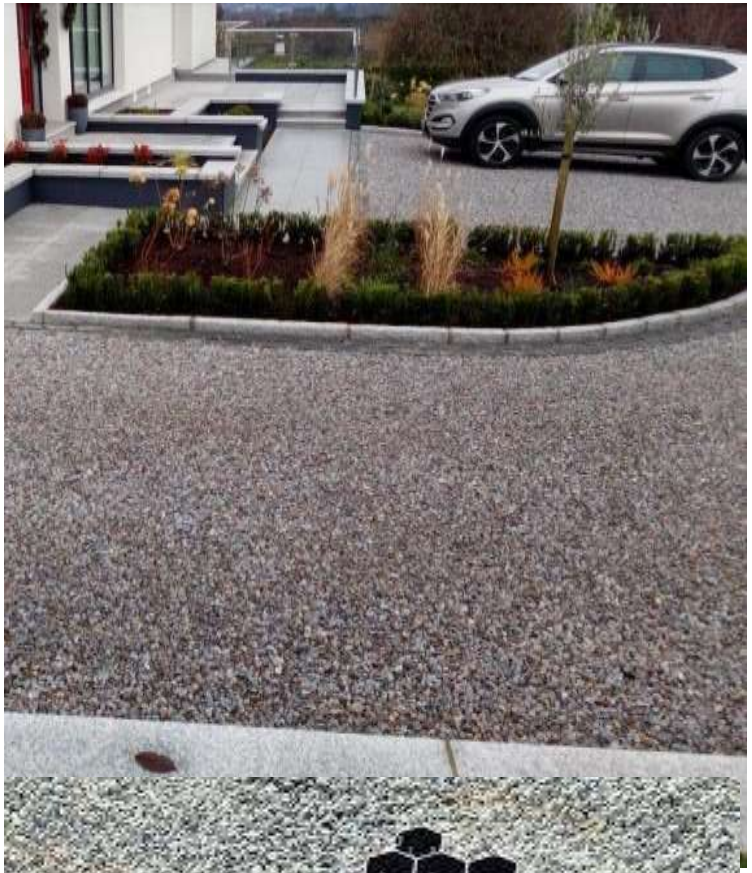
Increase Permeability & Reduce Water Use

- Soil Restoration
- Disconnected downspouts and paving
- Permeable Paving
- Raingardens & Swales
- Greywater & Rainwater Harvesting

Cool Urban Heat - Shade Trees

Increase Habitat and Edible Plantings

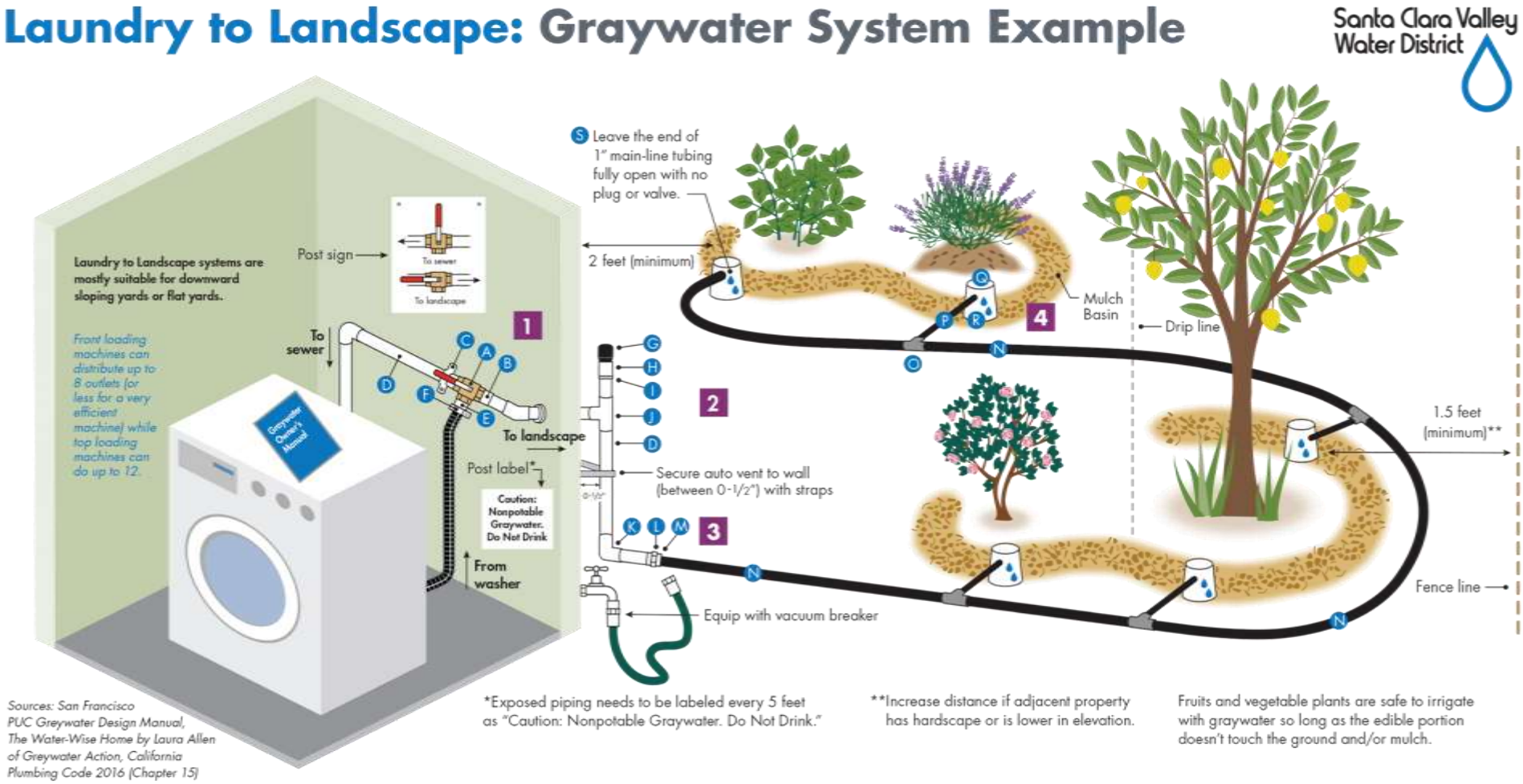
Permeable Paving



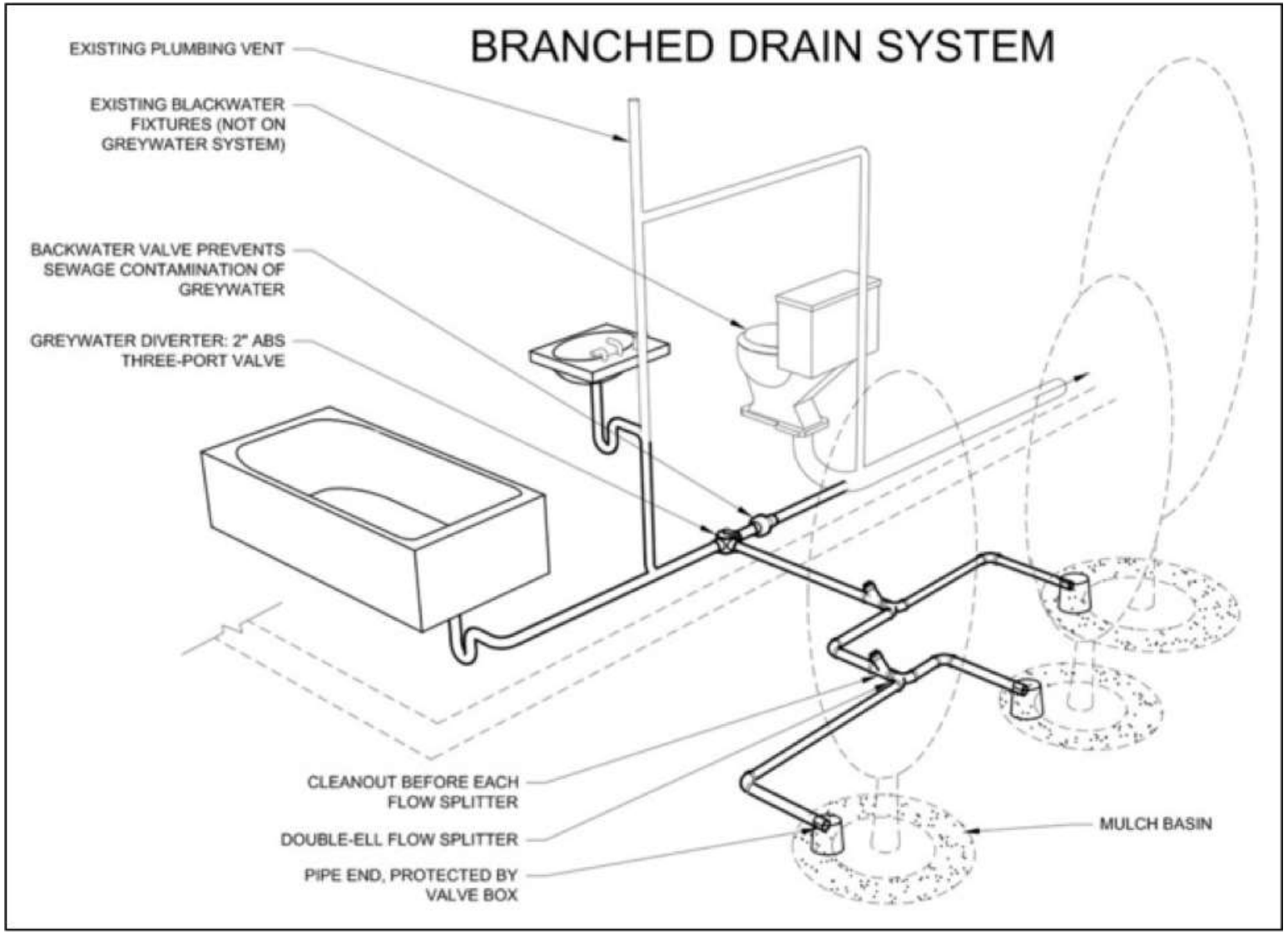
Decorative Aggregate

Raingardens, Swales, Biorention

Greywater Laundry to Landscape



Greywater Branched Drain



Greywater Template Sheet

APPLICANT INFORMATION:

LANDSCAPE TO LAUNDRY SYSTEM OVERVIEW:
A LAUNDRY-TO-LANDSCAPE GRAYWATER SYSTEM CAPTURES LIGHTLY USED WATER FROM THE DISCHARGE HOSE OF YOUR WASHING MACHINE AND PUMPS IT OUT TO THE LANDSCAPE THROUGH 1-INCH TUBING. THE SYSTEM DOES NOT ALTER THE EXISTING PLUMBING AND THEREFORE DOES NOT REQUIRE A PERMIT. A THREE-WAY DIVERTER VALVE IS A NECESSARY COMPONENT, ALLOWING YOU TO SEND DISCHARGE WATER BACK TO THE SEWER SYSTEM WHEN NEEDED OR DURING THE RAINY SEASON.

INSTALLATION & DESIGN CONSIDERATIONS:
LAUNDRY TO LANDSCAPE GRAYWATER SYSTEMS ARE EASY TO INSTALL FOR THE DO-IT-YOURSELFER OR A PROFESSIONAL, ESPECIALLY IF THE WASHING MACHINE IS LOCATED ON AN EXTERNAL WALL AND IS IN CLOSE PROXIMITY TO THE LANDSCAPE AREA BEING IRRIGATED. NOTE, THE WASHING MACHINE PUMP WILL PROVIDE SUFFICIENT PRESSURE THROUGH A 1-INCH IRRIGATION LINE FOR 100-FEET ON FLAT GROUND. IF THE SYSTEM IS DESIGNED TO IRRIGATE UPHILL FROM THE WASHING MACHINE, THE DISTANCE SHOULD BE REDUCED TO 30-50 FEET WITH NO MORE THAN A 5% SLOPE, IF THE SYSTEM IS DESIGNED TO IRRIGATE DOWNHILL FROM THE WASHING MACHINE, THE DISTANCE MAY INCREASE TO 150-FEET DEPENDING ON SLOPE.

GRAYWATER REQUIREMENTS TO COMPLY WITH CALIFORNIA PLUMBING CODE (" CPC") STANDARDS:

- O NOTIFY ENFORCING AGENCY
- O BE ABLE TO REDIRECT TO SEWER
- O NO POTABLE WATER CONNECTION
- O CONTAIN GRAYWATER ON SITE
- O DIRECT AND CONTAIN GRAYWATER WITHIN MULCH BASINS (IRRIGATION OR DISPOSAL FIELD) BELOW THE GROUND SURFACE
- O NO PONDING OR RUNOFF
- O OUTLETS COVERED BY AT LEAST 2-INCHES OF MULCH, ROCK, OR A SHIELD (E.G. VALVE BOX LID)
- O MINIMIZE CONTACT WITH HUMANS AND ANIMALS
- O DIVERT WATER TO THE SEWER IF IT CONTAINS DIAPERS, OIL, OTHER CHEMICALS
- O GRAYWATER DIVERTED TO LANDSCAPE SHALL NOT CONTAIN HAZARDOUS CHEMICALS
- O PERMIT EXEMPTION DOES NOT GRANT INSTALLATION THAT VIOLATES OTHER CODE OR LAWS
- O POST OPERATION AND MAINTENANCE MANUAL

ADDITIONAL INFORMATION

GRAYWATER IS RECEIVED BEST BY TREES, BUSHES, SHRUBS, SMALL PERENNIALS AND LARGER ANNUALS, BUT IS PROHIBITED ON LAWN, RAISED BEDS, ROOT AND LEAFY VEGETABLES, MODERATE WATER USERS SUCH AS FRUIT TREES ARE ALSO AN IDEAL APPLICATION. GRAYWATER IS SOMEWHAT ALKALINE (HIGH pH) AND NOT RECOMMENDED FOR PLANTS THAT PREFER ACIDIC SOILS (LOW pH) LIKE BLUEBERRIES AND RHODEDENDRONS SOIL TYPE WILL DETERMINE BOTH HOW QUICKLY GRAYWATER IS ABSORBED IN YOUR LANDSCAPE AND THE SIZE OF THE MULCH BASINS NEEDED TO INFILTRATE THE GRAYWATER..

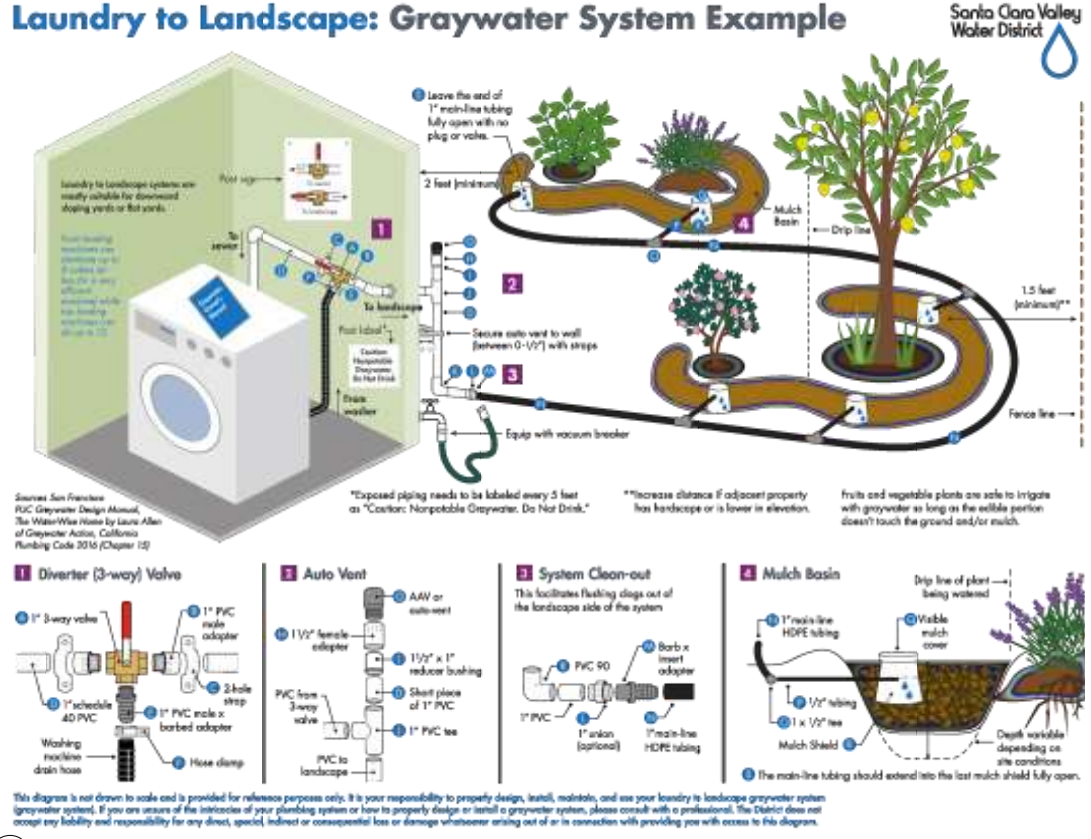
THE KEY TO PROPER IRRIGATION WITH GRAYWATER IS TO KNOW HOW MUCH THE CHOSEN PLANTS NEED GIVEN EVAPOTRANSPIRATION RATES, PLANT WATERING NEEDS, AND EXISTING CANOPY.

RECOMMENDED DETERGENTS:
TO ENSURE PLANT SURVIVAL AVOID SOAPS AND DETERGENTS THAT CONTAIN BORON, SODIUM AND CHLORINE COMPOUNDS, THE FOLLOWING LIST OF COMMERCIAL DETERGENTS ARE RECOMMENDED FOR USE WITH LAUNDRY TO LANDSCAPE GRAYWATER SYSTEMS.

- OASIS LAUNDRY
- BIO PAC LAUNDRY LIQUID
- BIOKLEEN LAUNDRY LIQUID
- ECOVER LAUNDRY WASH (SOME SALT)
- LIQUID ECOS LIQUID DETERGENT
- LIFE TREE LAUNDRY LIQUID
- MOUNTAIN GREEN LAUNDRY DETERGENT
- VASKA HERBATERGENT

APPLICANT INSTRUCTIONS:

1. ESTIMATE YOUR GRAYWATER SUPPLY USING THE CALCULATION PROCESS IN CALCULATIONS SECTION BELOW.
2. COMPLETE CALCULATIONS TO DETERMINE THE MINIMUM REQUIRED MULCH BASIN SIZE PER YOUR SOIL TYPE.
3. MEASURE ACTUAL IRRIGATION FIELD AREA(S) ON SITE AND DEVELOP NUMBER AND SIZE OF MULCH BASINS TO USE THIS VOLUME THAT FIT IN THE LANDSCAPE AREAS.
4. REVIEW REQUIRED SETBACKS SHOWN IN CPC TABLE 1502.4 THIS SHEET.
5. DEVELOP A SITE PLAN ILLUSTRATING THE FOLLOWING: REQUIRED SETBACKS, PROPOSED MULCH BASINS, VALVE LOCATIONS, PIPING DIAGRAM, AND TREE AND PLANT LOCATIONS TO BENEFIT FROM GRAYWATER.
6. IF IN BUILDING DESIGN AND/OR CONSTRUCTION PROCESS REVIEW PLAN WITH ARCHITECT (FOR LOCATION OF LAUNDRY NEAR GRAYWATER SUPPLIED LANDSCAPE AREA), CIVIL ENGINEER (FOR ANY POTENTIAL CONFLICTS WITH STORMWATER DRAINAGE), AND GENERAL & LANDSCAPE CONTRACTORS TO REVIEW THREE WAY VALVE LOCATION AND SUPPLY PIPE LOCATION.



1 LAUNDRY TO LANDSCAPE DETAIL
NTS

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RESIDENTIAL LANDSCAPE DESIGN TEMPLATE
SONOMA-MARIN SAVING WATER PARTNERSHIP
www.sonomamarinsavingwater.org

NAME: _____

SITE ADDRESS: _____

SHEET TITLE:
GREYWATER - LAUNDRY TO LANDSCAPE

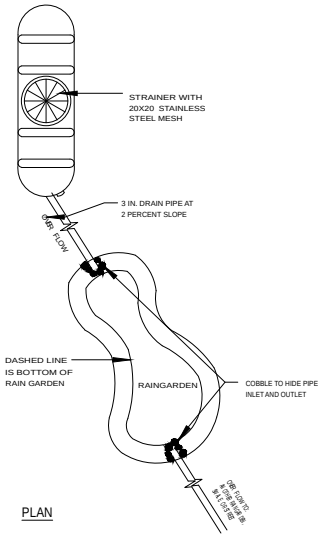
DATE
PERMIT PLAN
MAY 18, 2018

GW-1.0

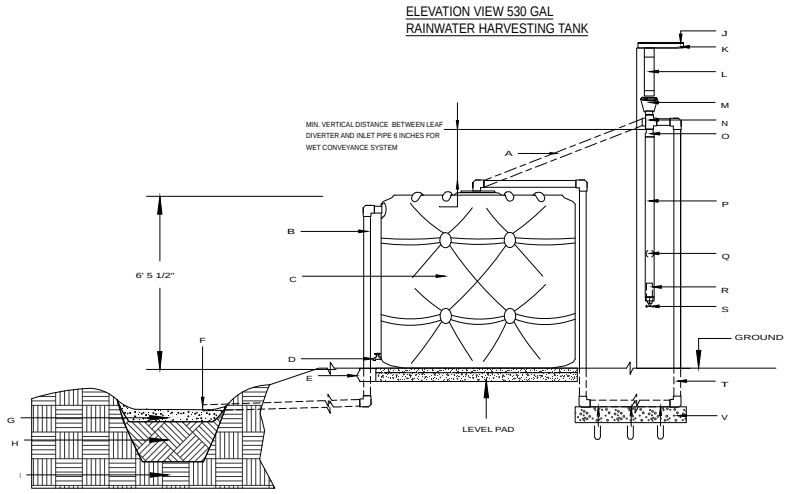
SHEET
OF

Rainwater Harvesting

Rainwater Template Sheet



PLAN



SECTION VIEW RAIN GARDEN

NOTES:
1. A RAINWATER CATCHMENT SYSTEM MAY NOT REQUIRE A BUILDING PERMIT PROVIDED ALL OF THE FOLLOWING ARE MET (CALIFORNIA PLUMBING CODE 1601.3 (I):
- WATER WILL BE USED FOR OUTDOOR NON-SPRAY IRRIGATION
- MAXIMUM STORAGE CAPACITY OF 5,000 GALLONS
- TANK IS SUPPORTED DIRECTLY UPON GRADE
- RATIO OF HEIGHT TO DIAMETER OR WIDTH DOES NOT EXCEED 2 TO 1
- DOES NOT REQUIRE ELECTRICAL POWER OR MAKEUP WATER SUPPLY CONNECTION (SEE NOTE 2 AND 3)
ALL OTHER RAINWATER CATCHMENT SYSTEMS MUST BE SUBMITTED FOR BUILDING PERMIT.
2. PUMP AND PRESSURE TANK LIKELY REQUIRE INEXPENSIVE, OVER-THE-COUNTER, ELECTRICAL PERMIT.
3. IF CITY WATER PLUMBED TO TANK FOR MAKE UP USING FLOAT VALVE OR MANUALLY OPERATED VALVE, THEN A PERMIT IS REQUIRED AND AN AIR GAP IS REQUIRED BETWEEN RAINWATER HARVESTING SYSTEM AND DOMESTIC WATER SYSTEM.
4. TANKS CAN BE DAISY CHAINED AT POINT "D" USING FLEXIBLE PIPE ONLY TO REDUCE CHANCE OF LEAKAGE IN EARTHQUAKES.
5. THERE ARE NO REQUIRED SETBACKS FROM BUILDINGS OR SIDE/BACK PROPERTY LINES, THOUGH A CONVERSATION WITH YOUR NEIGHBOR COULD BE HELPFUL.

A. PREFERRED DRY CONVEYANCE IF TANKS ARE NEXT TO DOWNSPOUT

B. OVERFLOW: 3 IN. DRAINAGE PIPE: SLOPED 2 PERCENT FOR HORIZONTAL SECTIONS

C. 530 GALLON BUSHMAN SLIMLINE RAIN HARVESTING TANK OR EQUIVALENT

D. HOSE BIB OR OPTIONAL CONNECTION TO PUMP AND PRESSURE TANK (SEE NOTE 2)

E. 4 INCHES COMPACTED BASEROCK WITH 2 INCHES OF PEA GRAVEL ON TOP

F. OVERFLOW TO RAINGARDEN (SHOWN)/SWALE/SPLASHBLOCK

G. 5 INCHES OF DECORATIVE GRAVEL WITH 2 INCHES OF PONDED WATER ABOVE

H. 12 INCHES AMENDED SOIL: 1/2 COMPOST, 1/2 NATIVE SOIL

I. UNDISTURBED NATIVE SOIL

J. FIRE SAFER LEAF GUARD

K. GUTTER

L. NORMAL DOWNSPOUT

M. OPTIONAL BUSHMAN LEAF DIVERTER (WITH 20X20 SCREEN IF USING WET CONVEYANCE) (REDUNDANT WITH LEAF GUARD ON GUTTERS)

N. 3 IN. PVC DRAINAGE TEE

O. 4 IN. TO 3 IN. PVC DRAINAGE REDUCER

P. 4 IN. DRAINAGE PIPE FOR THE FIRST FLUSH (THIS REMOVES THE FIRST, DIRTY WATER FROM A RAINSTORM)

Q. BUSHMAN FLOAT BALL

R. BUSHMAN FIRST FLUSH FILTERS (TO KEEP EMITTER FROM CLOGGING)

S. BUSHMAN DRIP EMITTER TO DRAIN DIRTY WATER BETWEEN STORMS

T. "WET" CONVEYENACE 3 IN. DRAINAGE PIPE
(WATER STAYS IN PIPE BETWEEN STORMS)

U. THREE SEPARATE 3/32 INCH HOLES TO DRAIN WATER FOR MOSQUITO CONTROL

V. CLEAN GRAVEL TO IMPROVE DRAINAGE FROM DRILLED HOLES

1 RAINWATER HARVESTING DETAIL
1/2" = 1'-0"

BY USING THESE PLANS, I AGREE TO DEFEND, INDEMNIFY AND HOLD HARMLESS THE SONOMA MARIN SAVING WATER PARTNERSHIP, ITS MEMBERS AND LEAD AGENCY, CITY OF SANTA ROSA, MARIN MUNICIPAL WATER DISTRICT, NORTH MARIN WATER DISTRICT, CITY OF PETALUMA, SONOMA COUNTY WATER AGENCY, VALLEY OF THE MOON WATER DISTRICT AND TOWN OF WINDSOR, AND THEIR RESPECTIVE DIRECTORS, OFFICERS, EMPLOYEES AND LANDSCAPE DESIGN CONSULTANTS ("INDEMNITEES") FROM ANY AND ALL LOSSES, CLAIMS, SUITS AND DAMAGES, INCLUDING ATTORNEY'S FEES, ARISING OUT OF OR RESULTING FROM THE USE OF THIS LANDSCAPE PLAN, EXCEPT FOR LOSSES, CLAIMS, SUITS OR DAMAGES THE PROJECT OWNER TO ENSURE THAT PLAN ELEMENTS ARE IMPLEMENTED SUITABLE AND CORRECT TO APPLICABLE CODES, RULES, REGULATIONS, ORDINANCES AND/OR LAWS.

SONOMA MARIN SAVING WATER PARTNERSHIP, ITS MEMBERS AND LEAD AGENCY, CITY OF SANTA ROSA, MAKE NO REPRESENTATIONS AND EXPRESSLY NO WARRANTIES, EXPRESS OR IMPLIED, EITHER IN FACT OR BY OPERATION OF LAW, BY STATUTE OR OTHERWISE, AND SPECIFICALLY DISCLAIM SAVING WATER PARTNERSHIP, ITS MEMBERS AND LEAD AGENCY, CONSULTANTS EACH SPECIFICALLY DISCLAIMING OTHER WARRANTIES OF ANY KIND, INCLUDING ANY WARRANTY OF MERCHANTABILITY, INCLUDING ANY WARRANTY OF QUALITY, CONFORMITY TO ANY REPRESENTATION OR DESCRIPTION, FITNESS FOR A PARTICULAR PURPOSE OR ANY WARRANTY AS TO THE VALIDITY OF ANY PATENT OR AS TO THE NON-INFRINGEMENT OF ANY INTELLECTUAL PROPERTY RIGHTS OF THIRD PARTIES.

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RESIDENTIAL LANDSCAPE DESIGN TEMPLATE
SONOMA-MARIN SAVING WATER PARTNERSHIP
www.sonomamarinsavingwater.org

NAME: _____ SITE ADDRESS: _____

SHEET TITLE:
RAINWATER HARVESTING

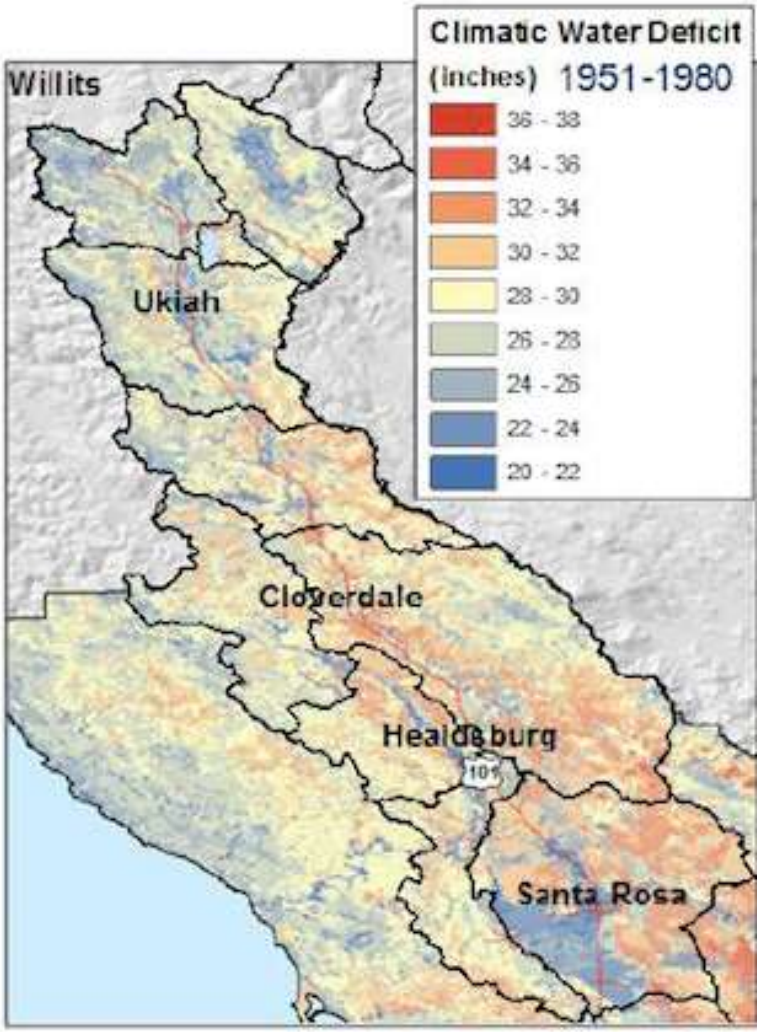
DATE
PERMIT PLAN
AUGUST 1, 2018

RW-1.0

SHEET
OF

Landscape Permit Requirements

- Landscape area < 2500 sf
- Smart irrigation controllers with weather sensor
- 75% low water use plants
- 25% medium max
- Drip irrigation systems
- Owners self certify
- Simplified inspection



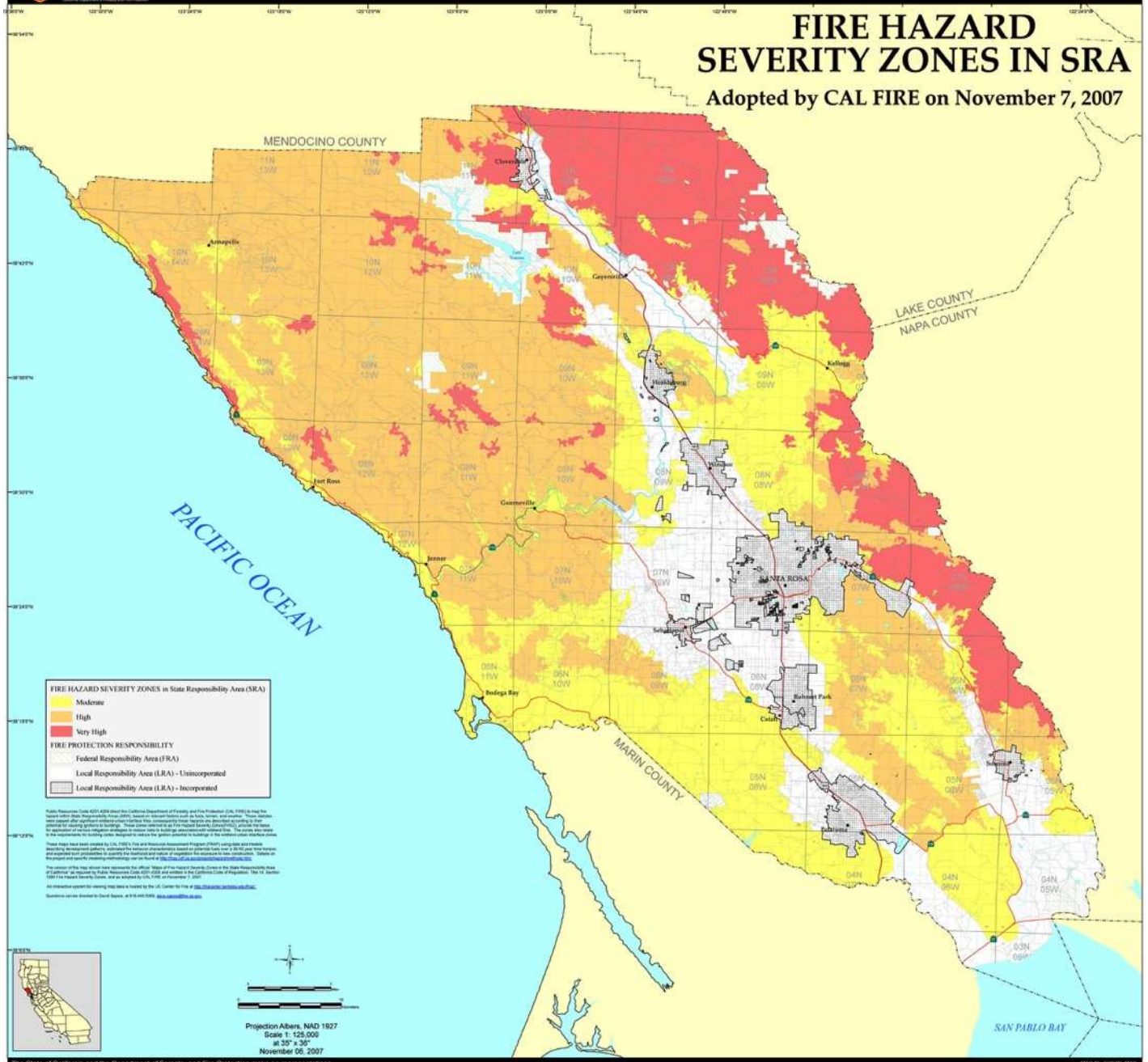
Fire Safer Guidelines

- Within 5’ of house plantings < 3’ tall, low fuel
- Plants ”Clean and Green” esp. in 5’ area
- Defensible spaces front and back
- Place trees away from structures
- Fire safer plant selection - Agency lists
- Reduce connectivity of fuels
- Consider wind direction of fire weather
- For SRA, LRA more stringent WUI guidelines

SONOMA COUNTY

FIRE HAZARD SEVERITY ZONES IN SRA

Adopted by CAL FIRE on November 7, 2007



Projection Albers, NAD 1927
Scale 1: 125,000
at 35° x 35°
November 06, 2007

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Obtain FRAP maps, data, metadata and publications on the Internet at http://frap.cdf.ca.gov
For more information, contact CAL FIRE-FRAP, PO Box 944246, Sacramento, CA 94244-2460, (916) 327-3939

Arnold Schwarzenegger, Governor,
State of California
Mike Chrisman, Secretary for Resources,
The Resources Agency
Ruben Grijalva, Director,
Department of Forestry and Fire Protection

MAP ID: FHSZS_MAP

DATA SOURCES
CAL FIRE Fire Hazard Severity Zones (FHSZS06_3)
CAL FIRE State Responsibility Areas (SRA05_5)
CAL FIRE Incorporated Cities (Incorp07_3)
PLSS (1:100,000 USGS, Land Grants with CAL FIRE grid)

Public Mtgs and Dialogue

- Whole system includes social system
- Engage the public
- Hear community priorities
- Understand design and rebuild context
- Increase knowledge of sustainable design & materials
- Increase implementation of sustainable techniques and methods

EXIT

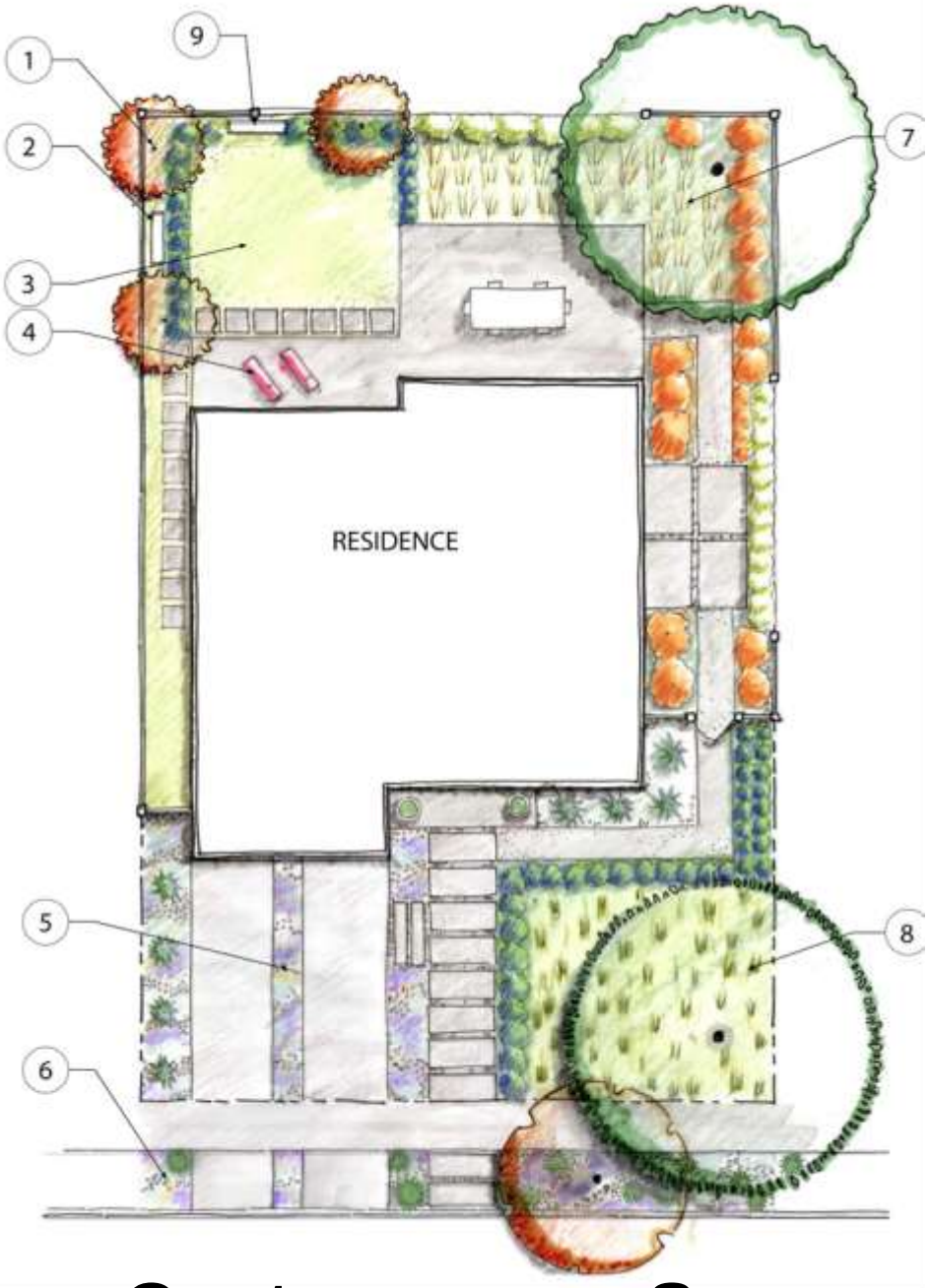
PLANTING CONCEPT

LEGEND

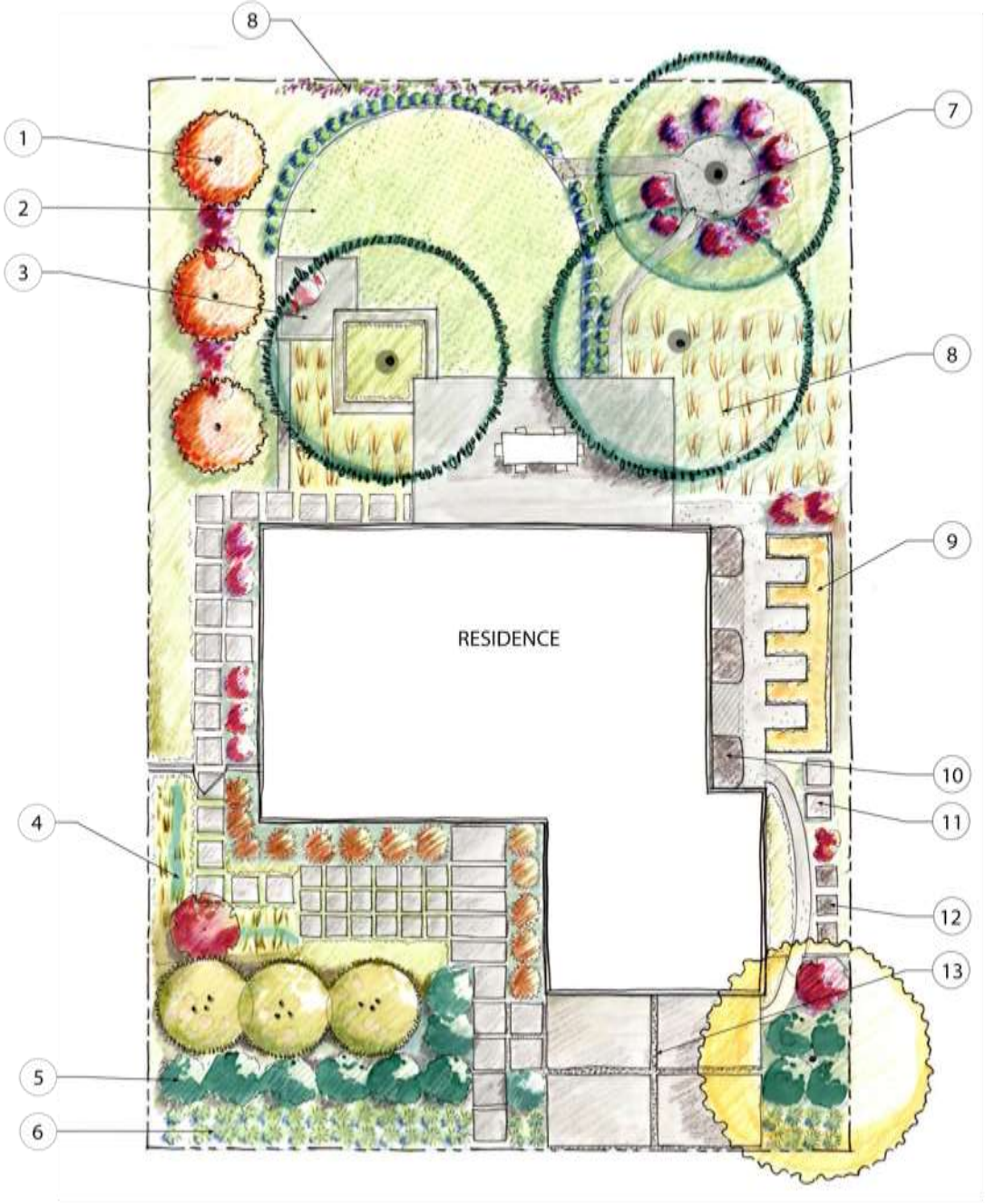
NATIVE ADAPTIVE

Key Feedback:

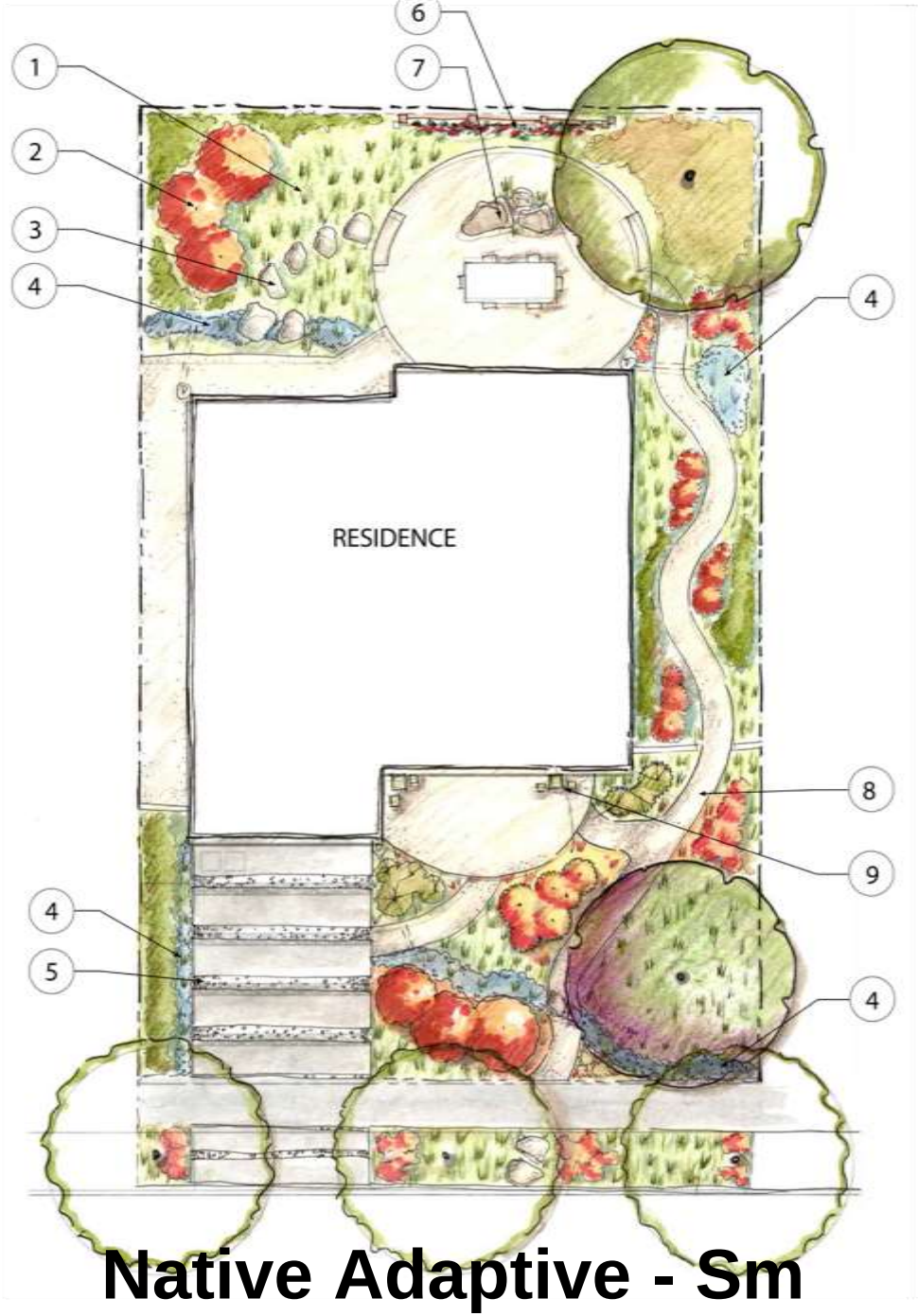
- Wanted a menu of items: details, plant lists Ability to mix and match
- Low cost options (Contemporary, Native)
- Low Maintenance (Contemporary, Native)
- Ease of Permitting – all elements approved by Planning and DPW
- County and City: Support the process with trainings, demo gardens and workshops



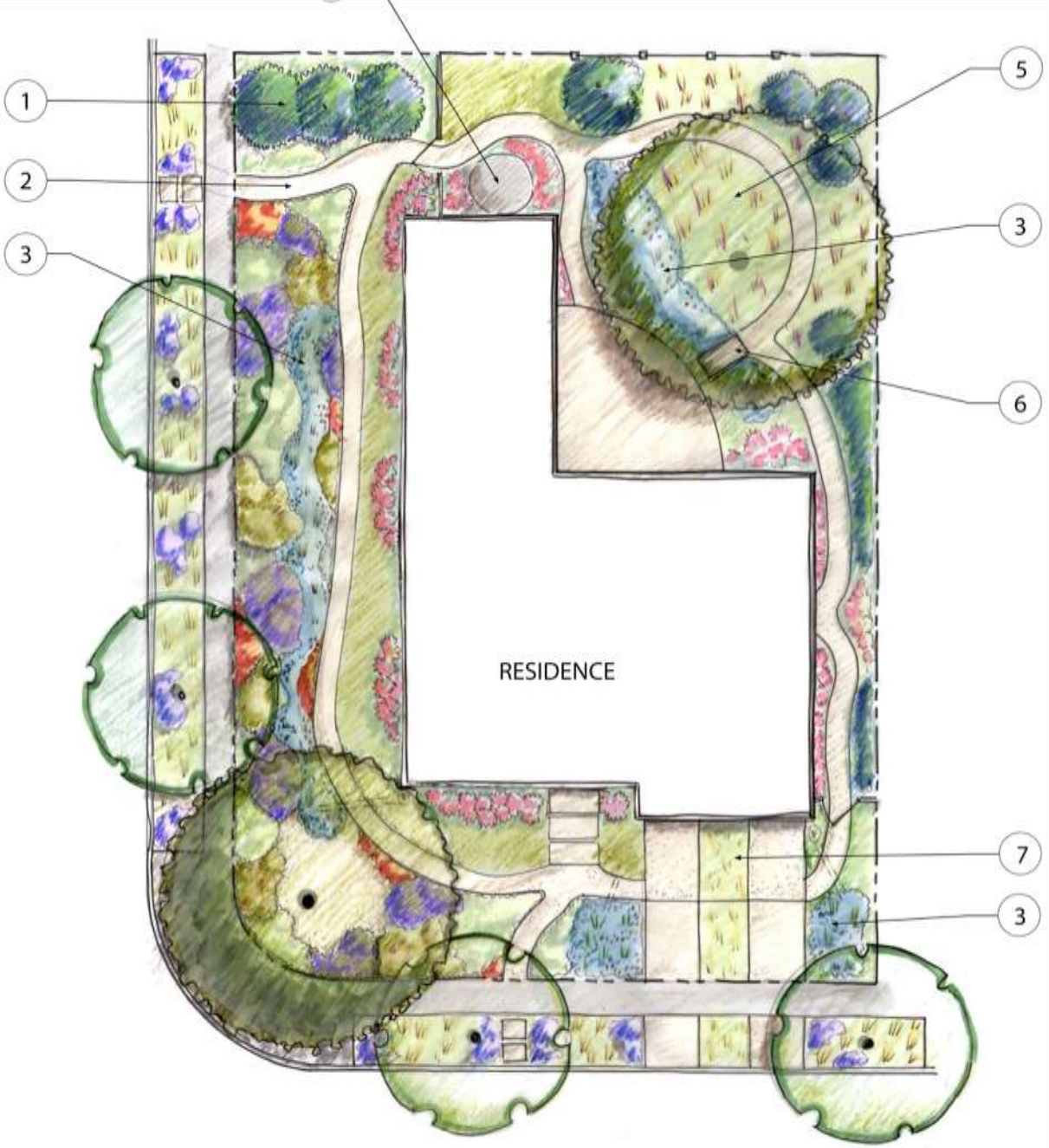
Contemporary Sm



Contemporary Lg



Native Adaptive - Sm



Native Adaptive - Corner