

**NATIONAL WESTERN CENTER
EXECUTIVE OVERSIGHT COMMITTEE ("EOC") - SESSION #9**

January 28, 2016

1:00 pm- 2:30 pm Wellington Webb Building, Room 4.F.6

AGENDA

- **1:00 pm Call meeting to order** (*Kelly Leid*)

- **1:00 – 1:05 pm Review/approval of December 2015 meeting notes** (*Kelly Leid*)

- **1:05 – 1:30 pm NWC Project Plan Updates**
 - CCD Dept. of Finance 1st Bond Issuance (*Cary Kennedy*)
 - RTA Next Steps (*Lotte Lieb Dula*)
 - Land Acquisition (*Jeff Steinberg*)
 - Historic Assessment (*Barbara Frommell*)
 - Rail Consolidation (*Eric Shafran*)
 - 2016 NWSS Data Collection and Parking Management Study Preparations (*Emily Gloeckner*)

- **1:30 – 2:10 pm In-depth Project Plan & Discussion**
 - [10 minutes] ME Report, Energy, Waste & Water (*Eric Shafran*); EOC ACTION REQ.
 - [30 minutes] CSU Water Resources Center (*Jocelyn Hittle and Eric Shafran*)

- **2:10 – 2:20 pm Partner Updates**
 - WSSA/NWSS (*Paul Andrews/Ron Williams*)
 - CSU (*Tony Frank/Amy Parsons*)
 - CCD (*Kelly Leid/Gretchen Hollrah*)

- **2:20 – 2:30 pm EOC Member Announcements/Public Comments***
 - Public comment (*): the EOC shall take public comments from interested stakeholders who have signed up. Each speaker shall have up to 3 minutes to speak on a topic relevant to the NWC project.

- **2:30 pm Meeting Adjournment**

Next NWC-EOC meeting: February 25, 2016 @ 1:00 pm (4.F.6)



National Western Center
Executive Oversight Committee Meeting Minutes

DRAFT

Date of Meeting:	December 17, 2015	Time:	1:00 pm-2:00 p.m.
Minutes Prepared By:	Josh Roberts	Location:	Webb Building, Room 4.G.2

1. Meeting Objective
EOC VIII

2. Attendance at Meeting

Name	Organization		
Kelly Leid	NDCC	Erika Martinez	NDCC
Paul Andrews	National Western Stock Show	Bruce O'Donnell	AECOM/Starboard
Diane Barrett	Denver Mayor's Office	Tricia Ortega	NDCC
Albus Brooks	City Council	Amy Parsons	CSU
Drew Dutcher	GES Neighborhood Representative	Josh Roberts	City Attorney's Office
Cary Kennedy	Department of Finance	Jeff Romine	Office of Economic Development
Ron Williams	Western Stock Show Association	David Sedbrook	Symmetrix Solutions
		Eric Shafran	NDCC
Chris Brewer	AECOM	Roger Sherman	CRL Associates
Mindy Davine	Walker Parking	Katy Spritzer	NDCC
Ian Dehmel	Office of Economic Development	Jeff Steinberg	Department of Finance-Real Estate
Greg Fisher	Denver Water	Paul Washington	Office of Economic Development
Barb Frommell	NDCC	Dan Weisser	CH2M
Jocelyn Hittle	Colorado State University	Jen Welborn	City Attorney's Office
Gretchen Hollrah	Department of Finance		

Topic	Owner	Time
Call to order	Kelly Leid	1:05 p.m.
Quorum Present: Minutes of November 19, 2015 Meeting Approved		
RTA Application Update	Kelly Leid	1:12 p.m.
We are working towards an agreement on the resolution and will be meeting with the Partners and the State in January to discuss the state's "guardrails" on how we can spend the awarded funds.		



Date of Meeting:	December 17, 2015	Time:	1:00 pm-2:00 p.m.		
Minutes Prepared By:	Josh Roberts	Location:	Webb Building, Room 4.G.2		
Partners Report			Paul Andrews Tony Frank Kelly Leid	2:25 p.m.	
<p>WSSA-stock show preparations are in full-swing and WSSA is completing a feasibility study regarding fundraising efforts. WSSA will hire 500 more people in the coming days. Ticket sales and livestock are very strong. After 12/23 WSSA staff will be unavailable but any urgent matters can go through Paul.</p> <p>CSU- CSU will participate at NWSS. CSU held a pet clinic on December 5 for the community and will participate in upcoming Mile High ZED meeting. A new hire, Scott Farley, will work on grant opportunities and fundraising with partners.</p> <p>CCD-The Mayor is aware of the project and will be discussing in December at a retreat. Kelly will report out more next month.</p>					
Next Meeting Agenda Preparation			Kelly Leid/All		
<ul style="list-style-type: none"> • Project Update • RTA Update • Economic Study Update • Ongoing RFPs Progress Report • Fundamental to this group to talk openly and honest with team <ul style="list-style-type: none"> ○ We are partners, need to be fully aligned to be successful ○ Create lists of events for all partners to attend and share a uniform message 					
5. Action Items (ongoing)					
Action		Owner		Due Date	
Agri-business/Science Forum Actively recruit Ag industry leaders to site and get input about what they would like to see in Denver.		All		N/A	
Read CSU The Emergence of an Innovation Cluster in the Agricultural Value Chain along Colorado's Front Range."		All		N/A	
6. Adjournment					
Action		Owner		Time	
Kelly Leid adjourned the meeting.		Kelly Leid/All		2:32 p.m.	
7. Next Meeting:					
Date	1/28/2016	Time:	1:00-2:30pm	Location:	Webb Building, Room TBD
Objective:	Executive Oversight Committee IX				

NWC Regeneration Framework

Assessing District Level: Energy, Water & Waste

[Ideas & Strategies]



***An eco-district needs a community whose vision
matches its state of affairs. Utopia has never
been easy.***

The Decision Tree

- Why?
- When?
- What?
- How?

DISTRICT ENERGY is being proposed because of its ability to dramatically reduce the carbon intensity of heating and cooling, lower energy costs, improve air quality, increase the share of renewables in the energy mix, reduce reliance on fossil fuels and energy imports, and increase the resilience of the NWC community.

RENEWABLE ENERGY can provide high levels of affordable heat and cooling when incorporated into district energy systems through economies of scale and diversity of supply. This will enable (in the future) NWC to have 100% renewable energy or carbon-neutral targets for all phases of development.

Renewable Energy

District energy schemes are one of the most effective means for integrating renewable energy sources into heating and cooling sectors.

- solar thermal
- geothermal
- bio-energy
- wind-to-heat
- waste heat and
- natural, free, cooling systems

can benefit from the economies of scale that district energy provides.

HOLISTIC ENERGY PLANS: INTEGRATING ENERGY IN INFRASTRUCTURE AND LAND-USE PLANNING

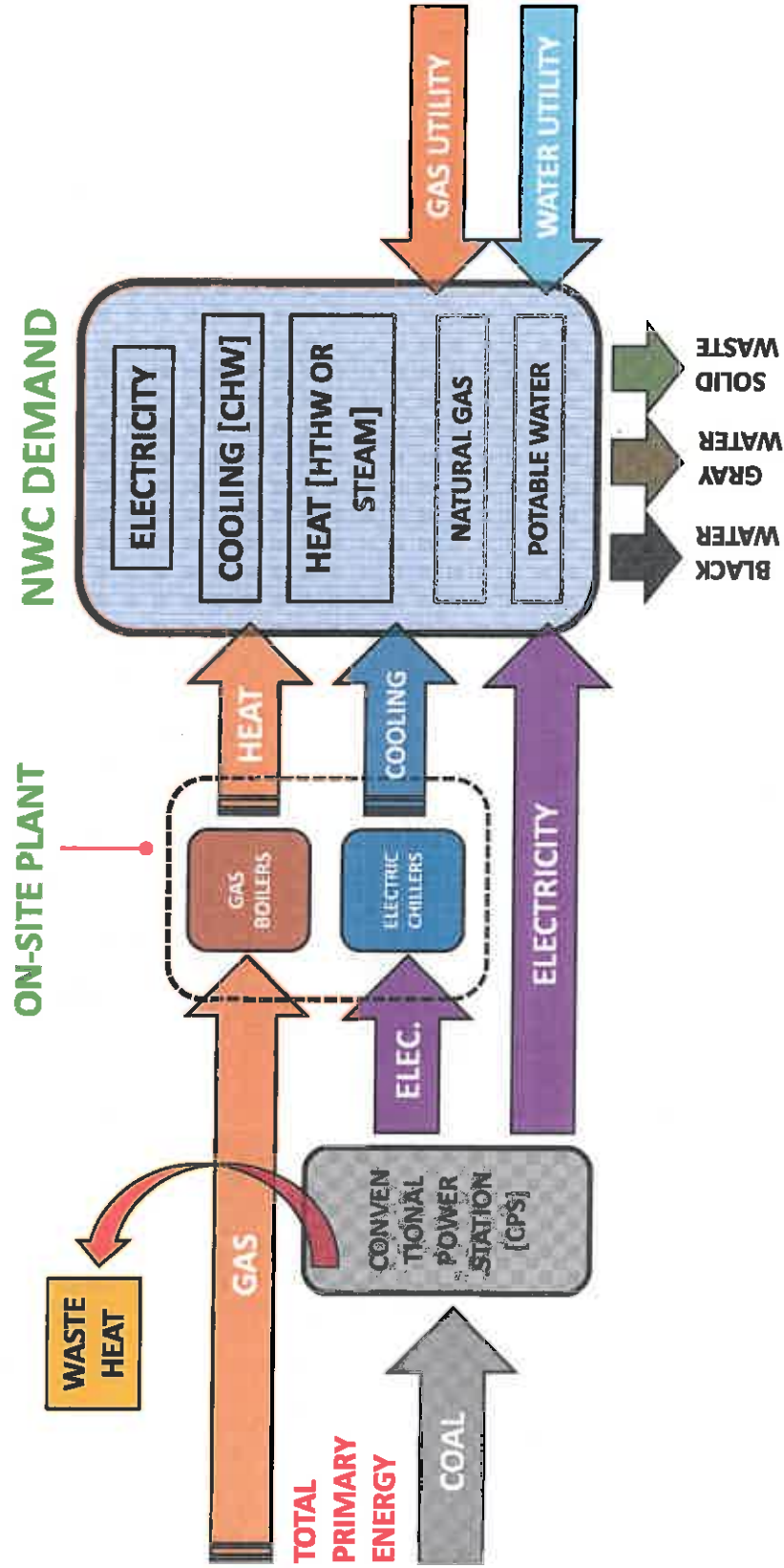
You often have land-use folks saying let's put the buildings here, and transport planners saying how do we get people moving around – and then almost as an afterthought, folks say, well, how do we provide energy to the neighborhood?

NWC should integrate these various issues into community building and urban planning.

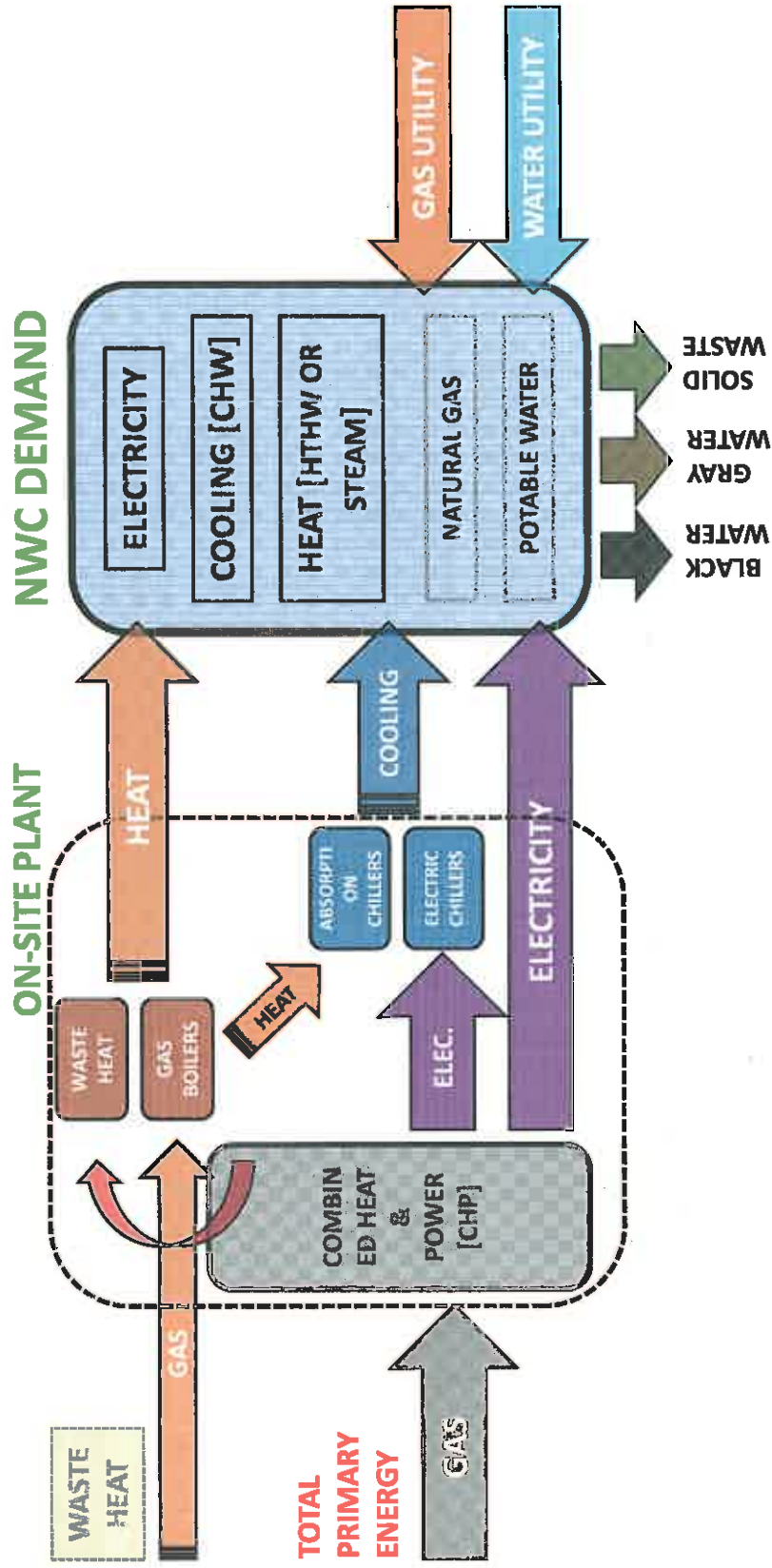
What is Baseline?

- De-Centralized:
 - Individual buildings and facilities served by:
 - Natural gas
 - Electricity
 - Potable water
 - Storm & Sewer (out flows)
 - Each building has its own self-contained heating & cooling systems.

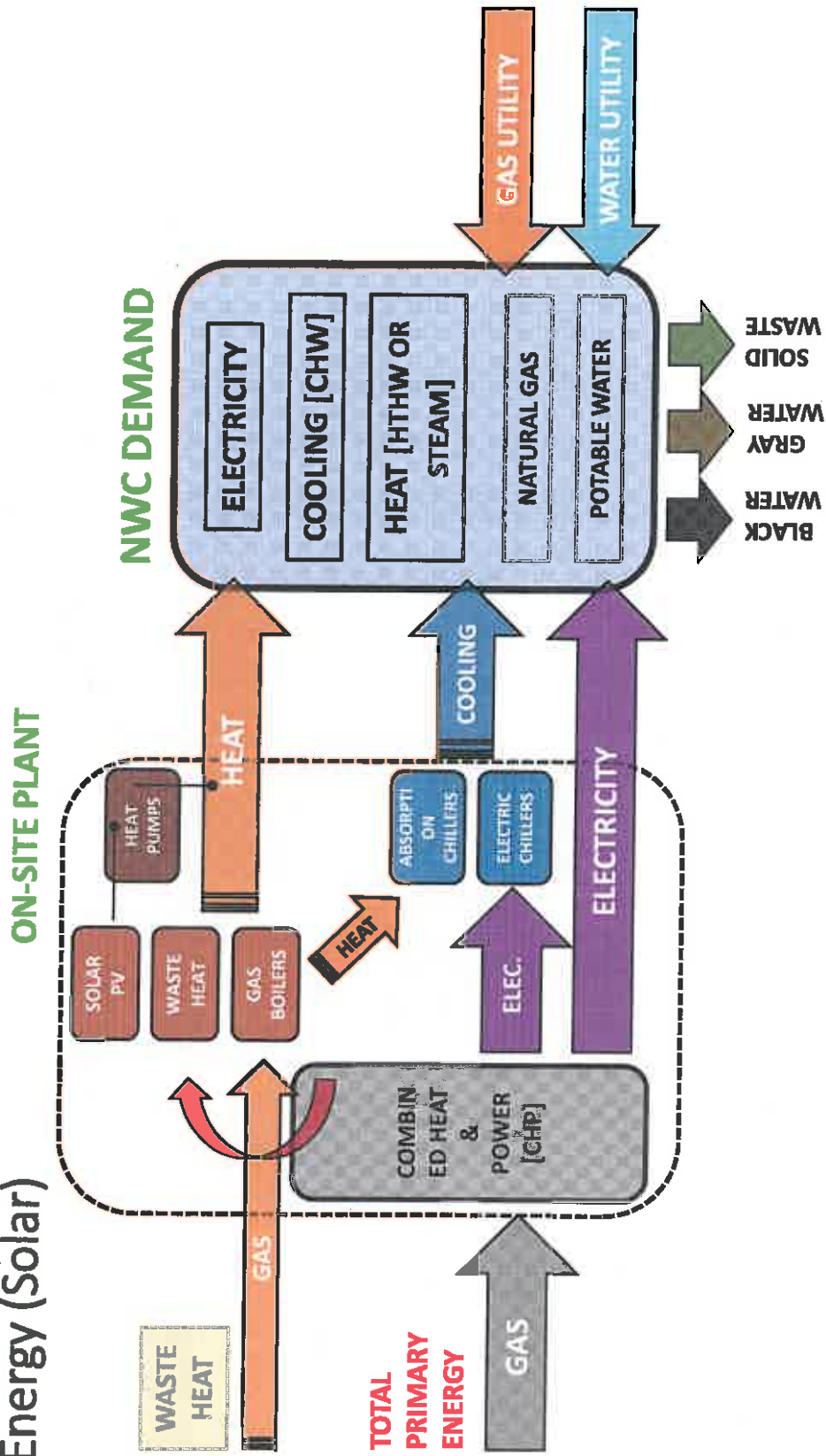
“Typical” Centralized or District Heating/Cooling



“Contemporary” Centralized or District Heating/Cooling

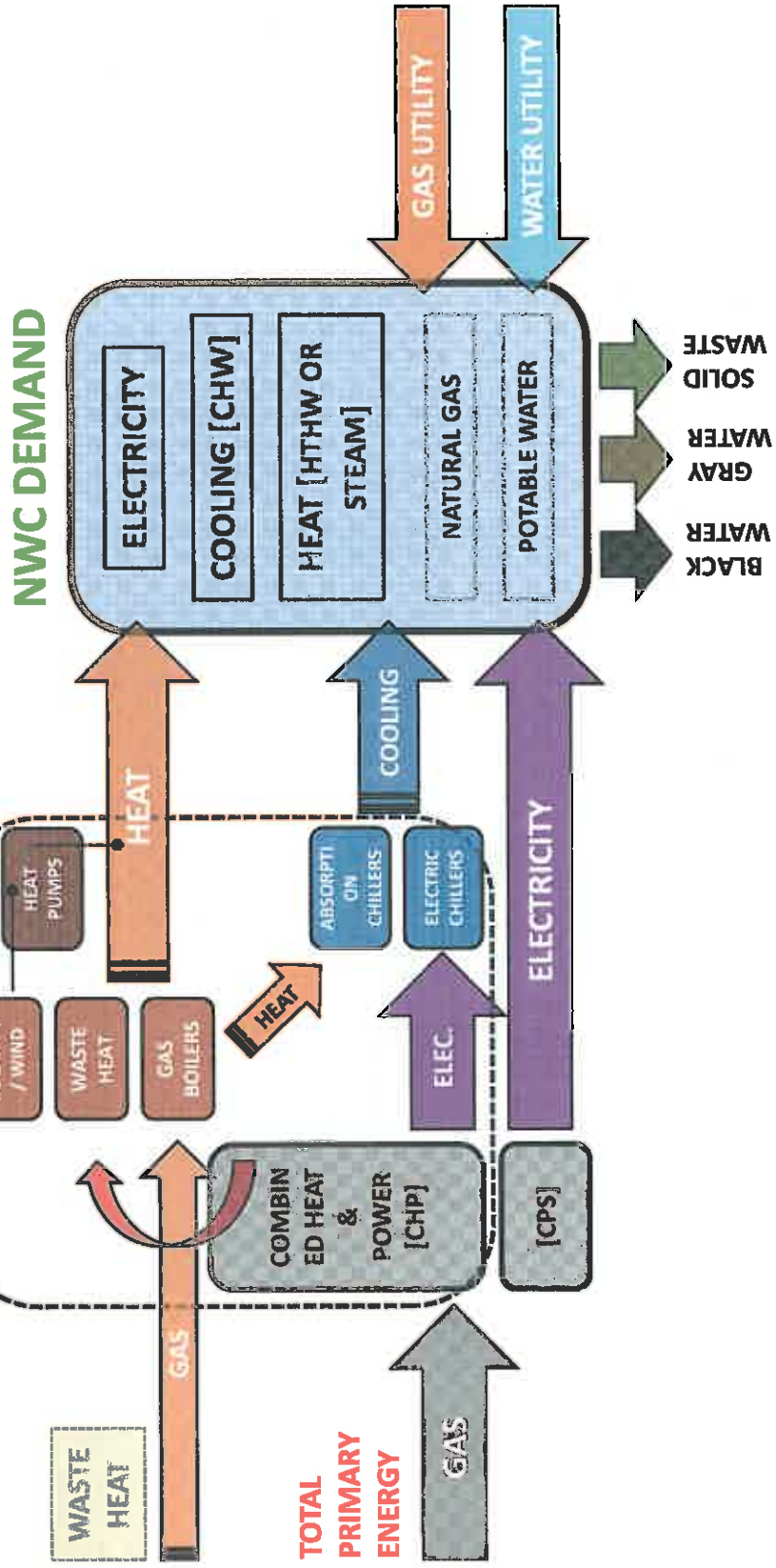


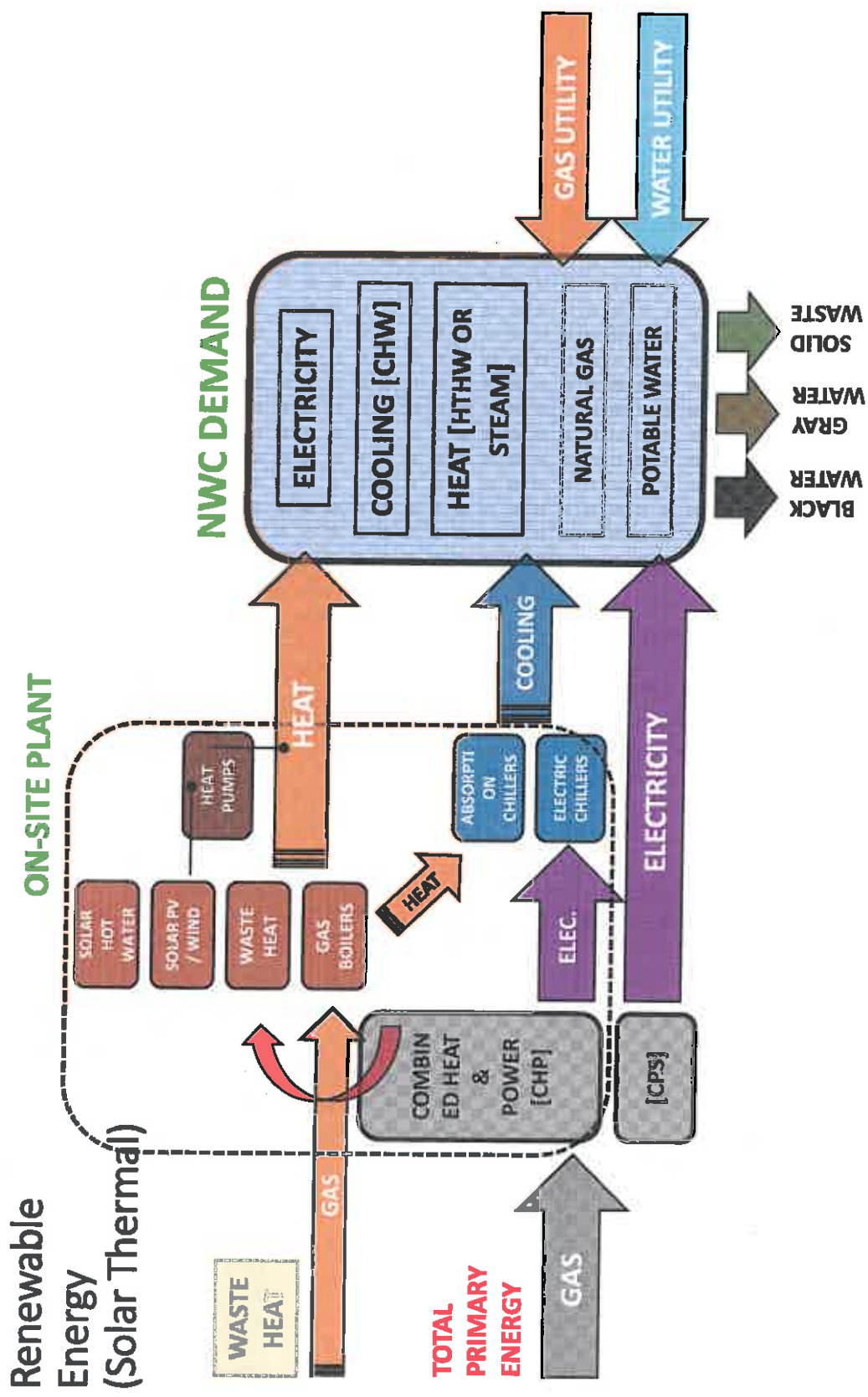
Renewable Energy (Solar)



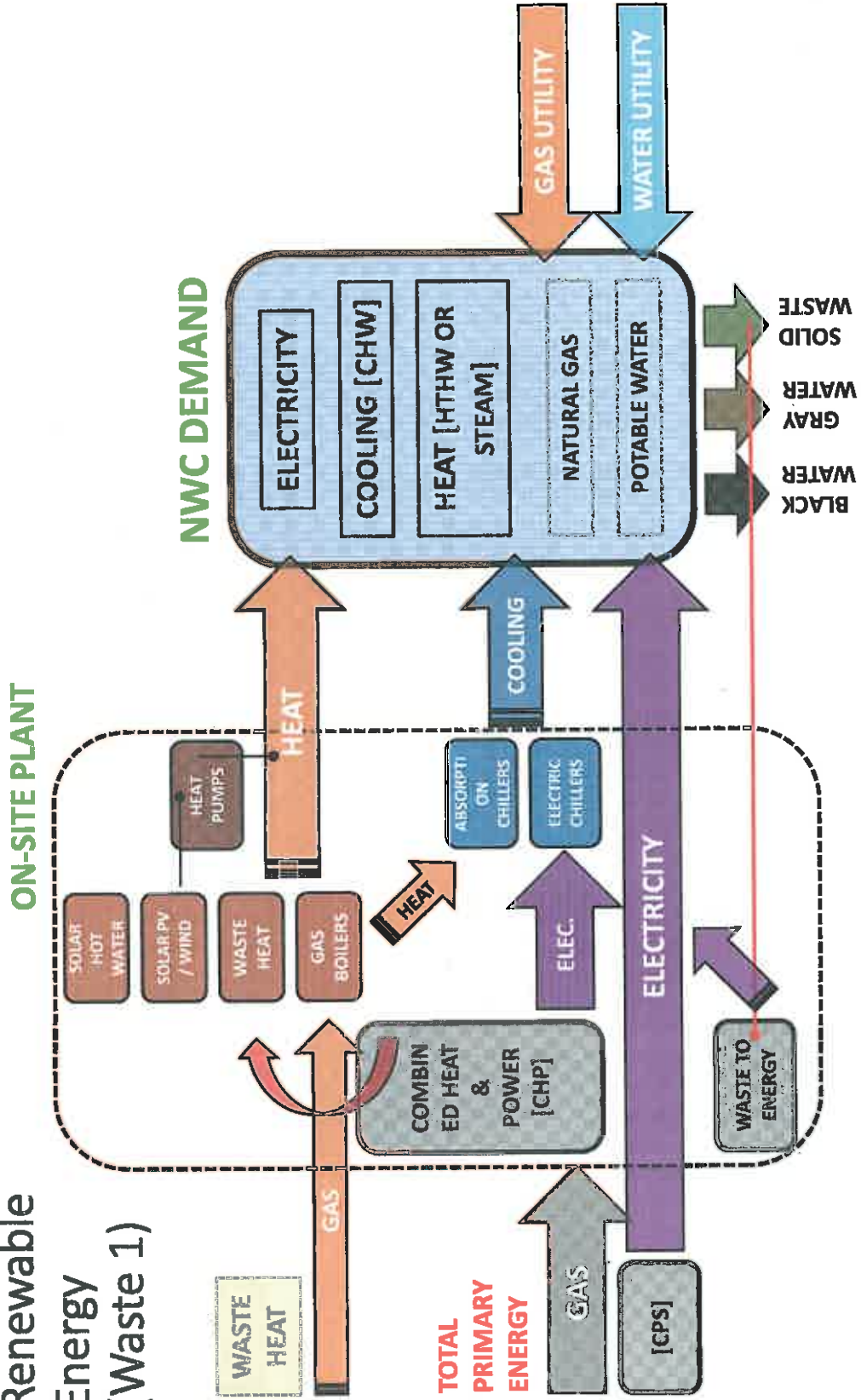
Renewable Energy (Wind)

ON-SITE PLANT

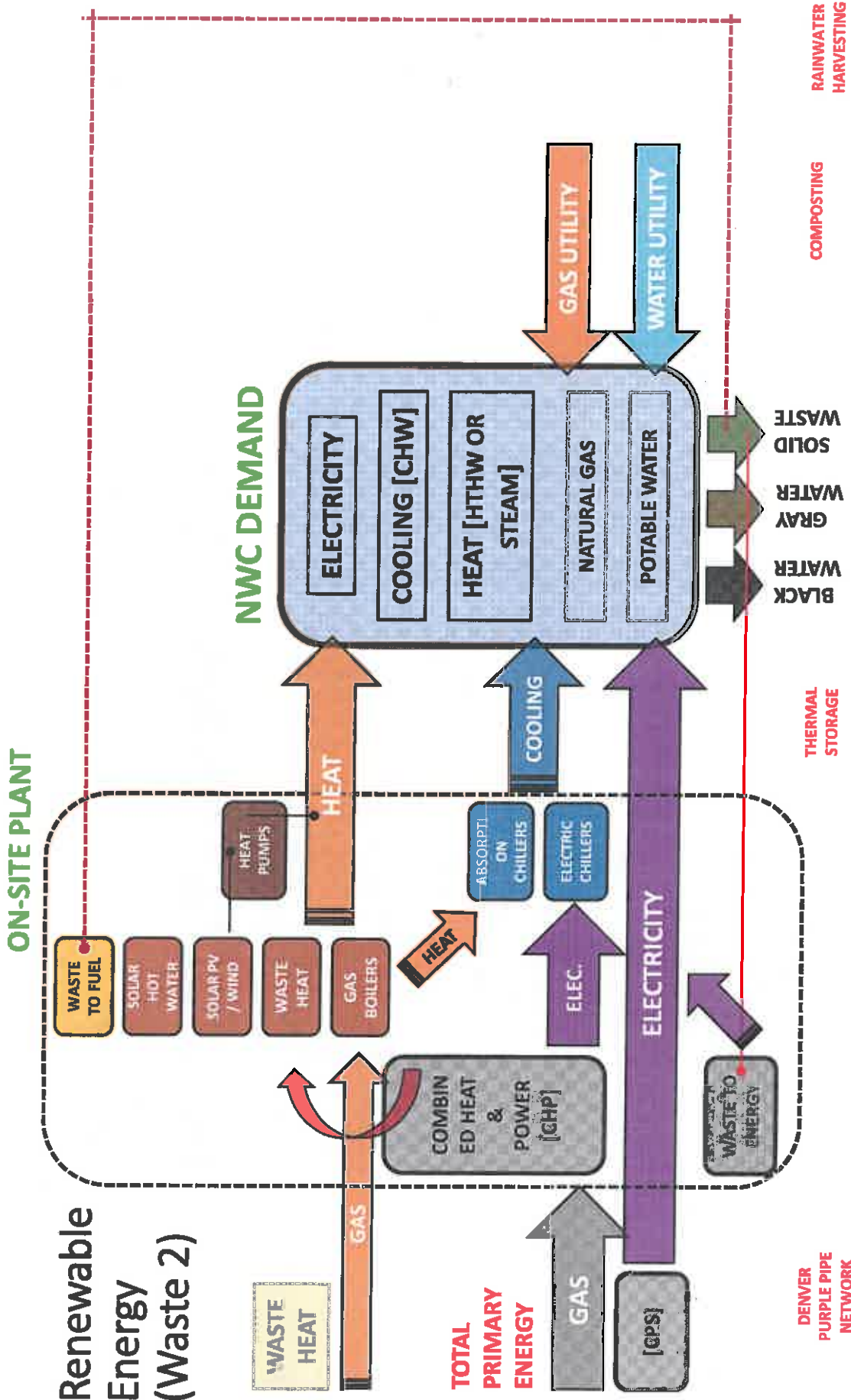




Renewable Energy (Waste 1)

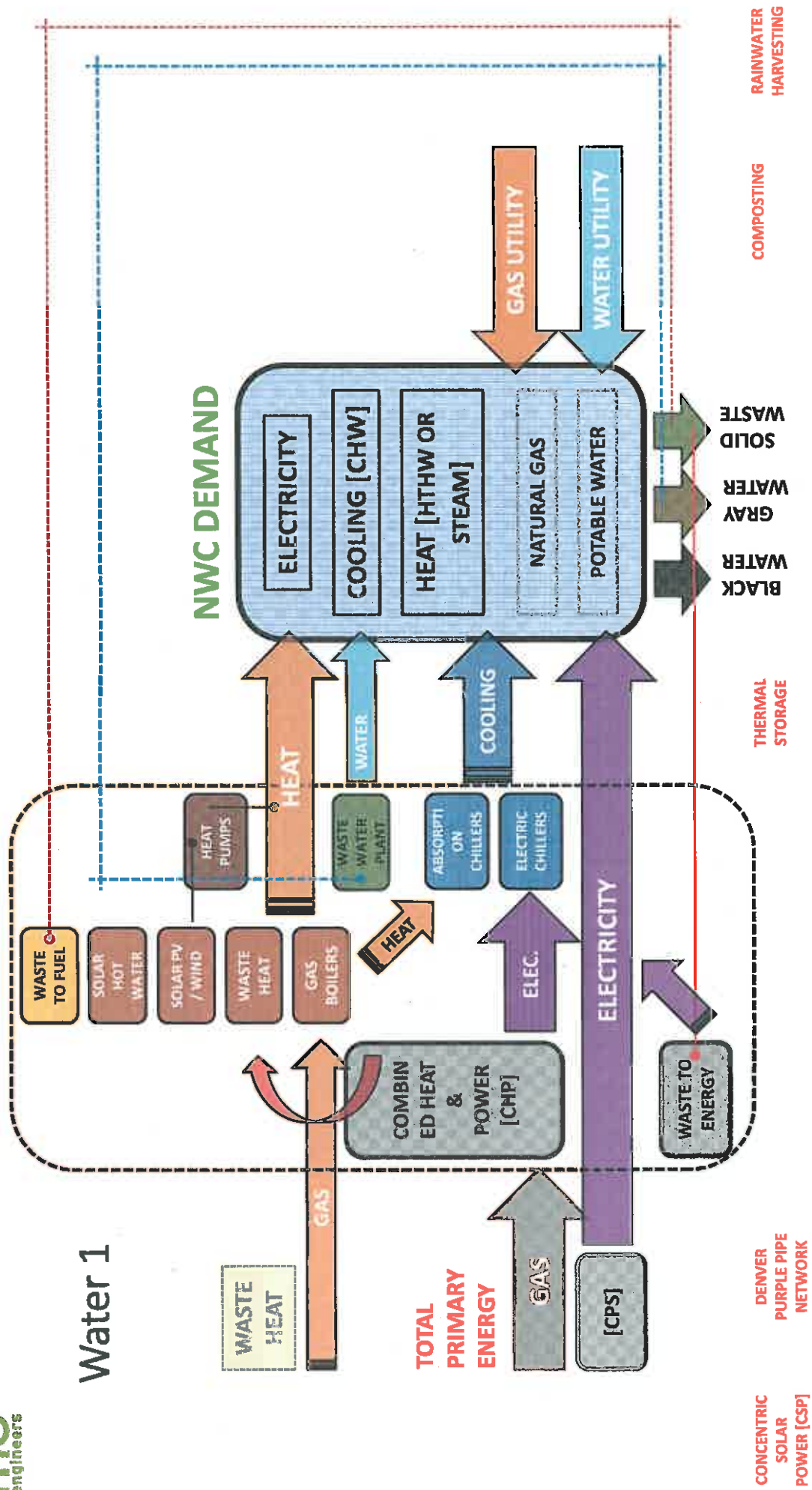


Renewable Energy (Waste 2)

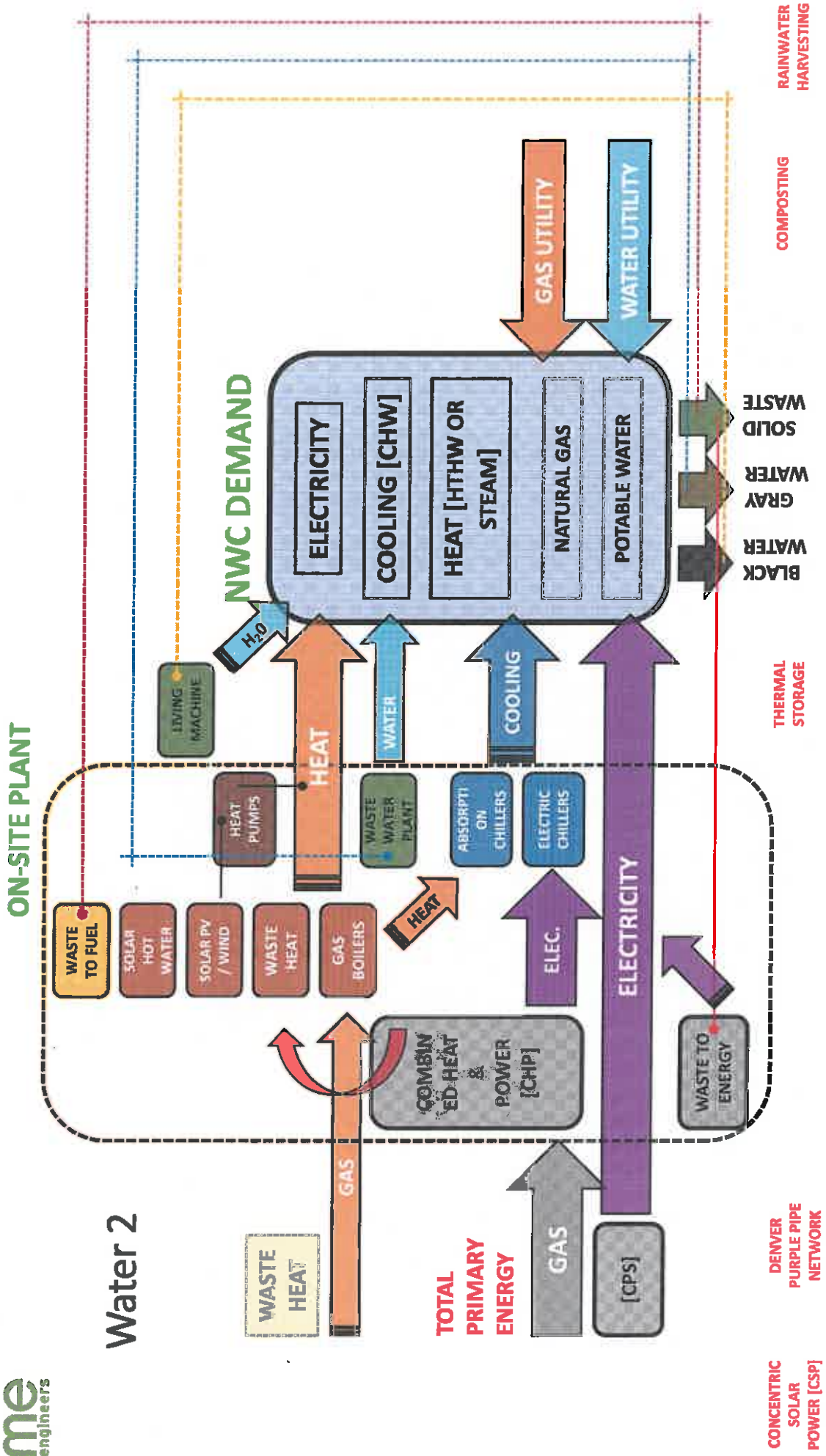


ON-SITE PLANT

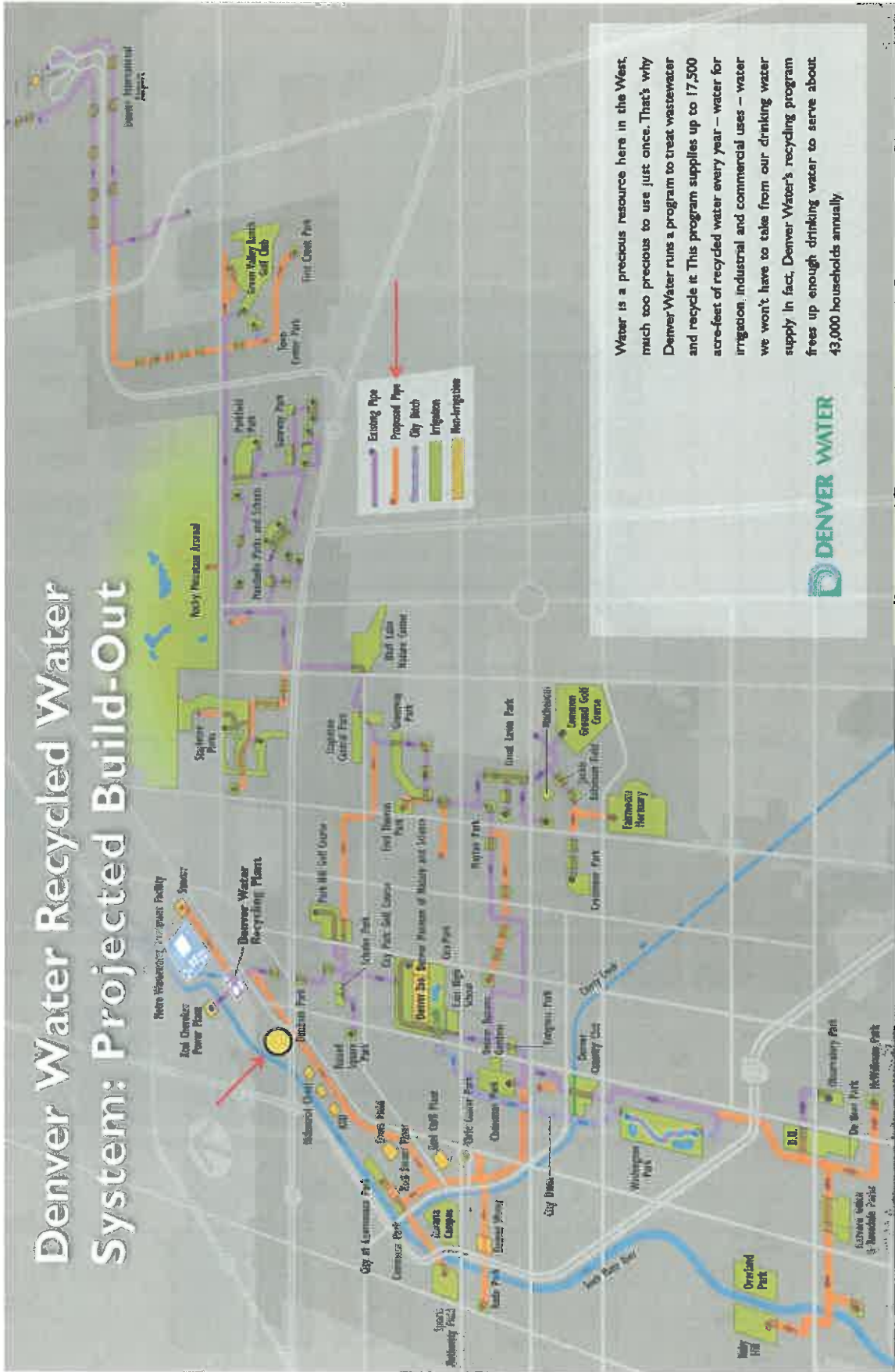
Water 1



Water 2



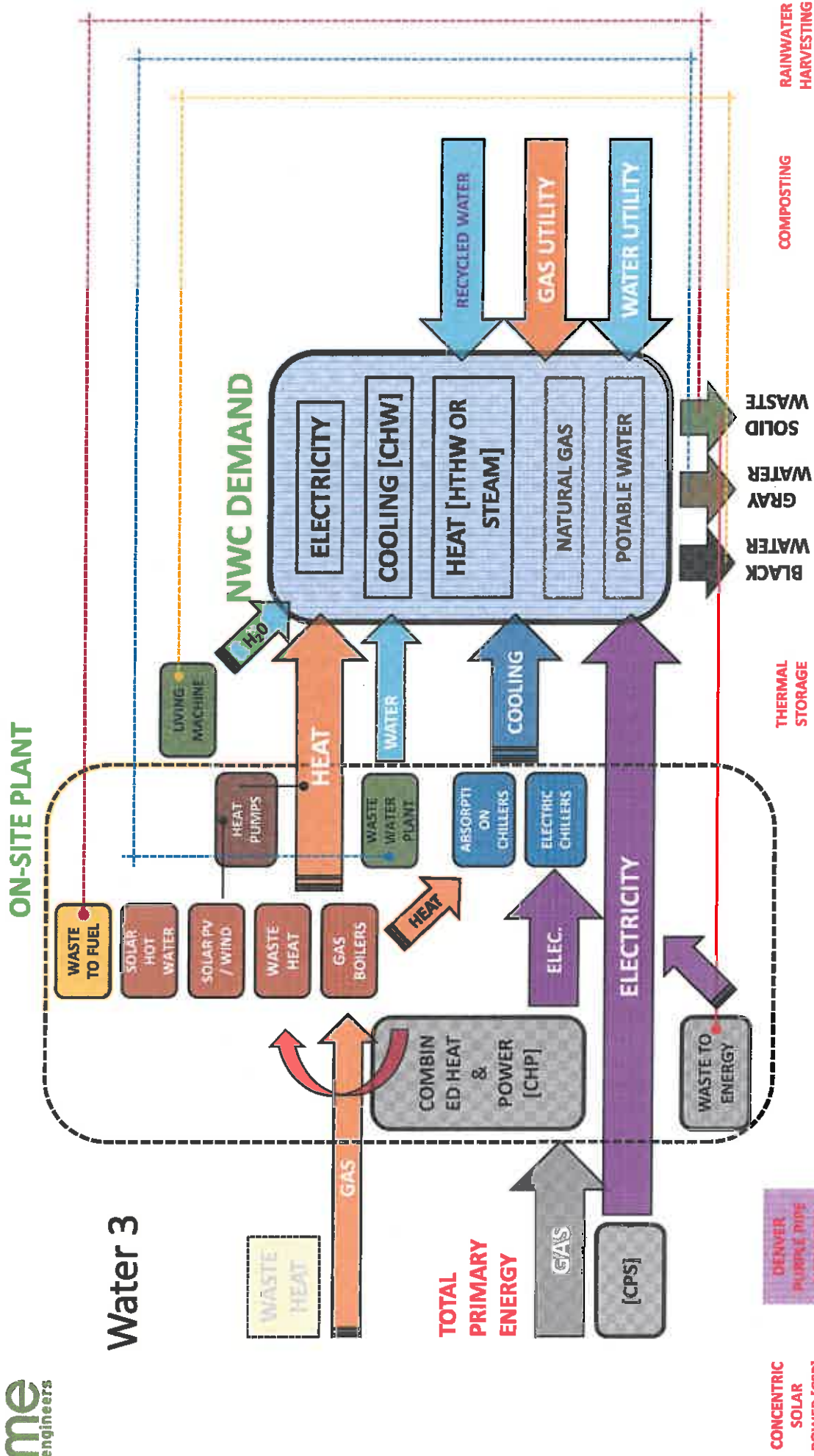
Denver Water Recycled Water System: Projected Build-Out



Water is a precious resource here in the West, much too precious to use just once. That's why Denver Water runs a program to treat wastewater and recycle it. This program supplies up to 17,500 acre-feet of recycled water every year – water for irrigation, industrial and commercial uses – water we won't have to take from our drinking water supply. In fact, Denver Water's recycling program frees up enough drinking water to serve about 43,000 households annually.



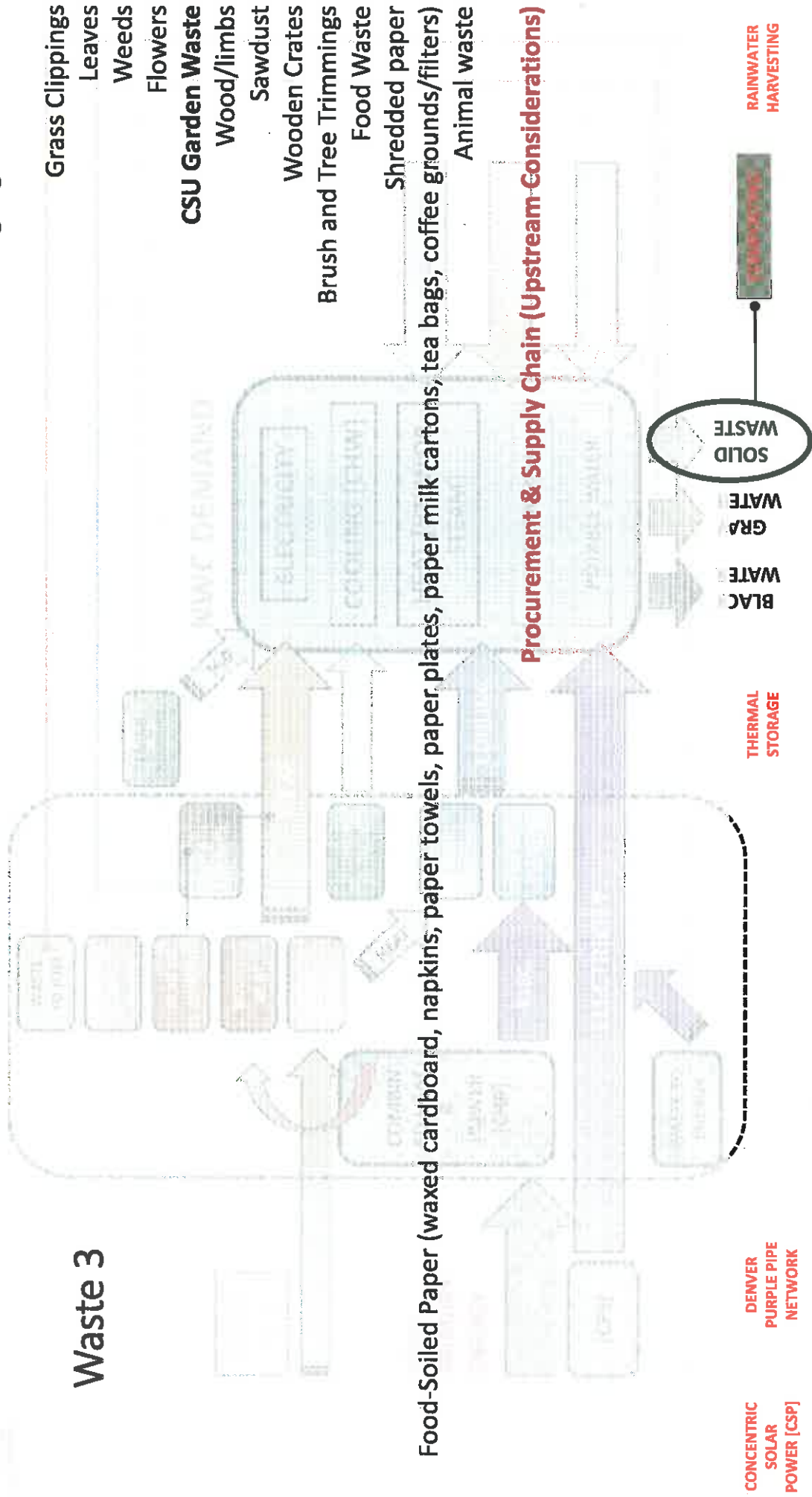
Water 3



The following organic materials:

- Grass Clippings
- Leaves
- Weeds
- Flowers
- CSU Garden Waste**
- Wood/limbs
- Sawdust
- Wooden Crates
- Brush and Tree Trimmings
- Food Waste
- Shredded paper
- Animal waste

Waste 3



Food-Soiled Paper (waxed cardboard, napkins, paper towels, paper plates, paper milk cartons, tea bags, coffee grounds/filters)

Procurement & Supply Chain (Upstream-Considerations)

CONCENTRIC SOLAR POWER [CSP]

DENVER PURPLE PIPE NETWORK

THERMAL STORAGE

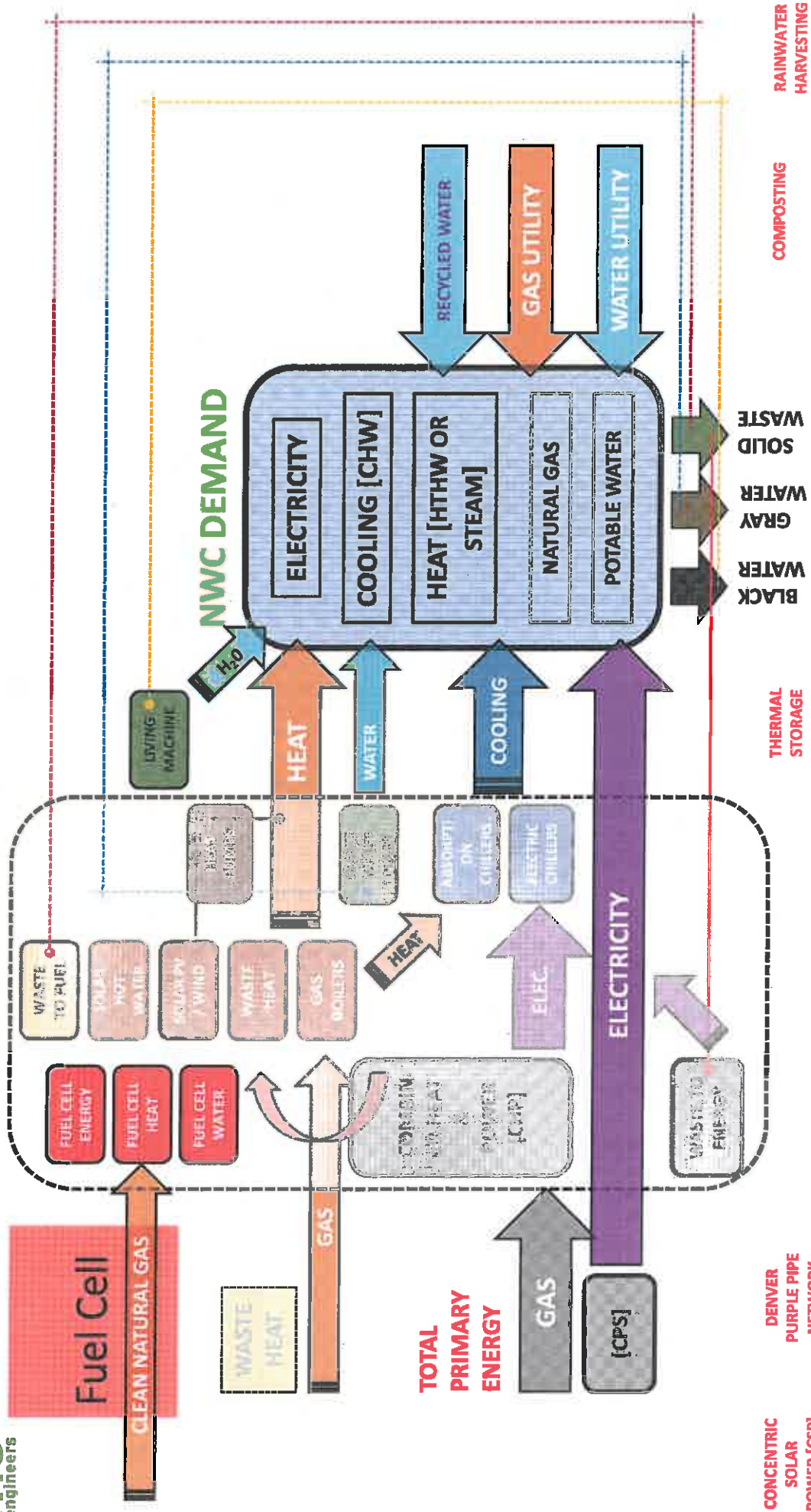
BLACK WASTE

GRAY WASTE

SOLID WASTE

RAINWATER HARVESTING

ON-SITE PLANT



CONCENTRIC SOLAR POWER [CSP]

DENVER PURPLE PIPE NETWORK

THERMAL STORAGE

BLACK WATER
GRAY WATER
SOLID WASTE

COMPOSTING

RAINWATER HARVESTING

NWC DEMAND

ELECTRICITY

COOLING [CHW]

HEAT [HTHW OR STEAM]

NATURAL GAS

POTABLE WATER

Fuel Cell

CLEAN NATURAL GAS

WASTE TO FUEL

SOLAR HOT WATER

SOLAR PV / WIND

WASTE HEAT

GAS BOILERS

HEAT

WASTE HEAT

CONCENTRIC SOLAR POWER [CSP]

WASTE TO ENERGY

HEAT

ELEC.

APPLIANCE ON CHILLERS

ELECTRIC CHILLERS

COOLING

WATER

HEAT EXCHANGERS

WATER

RECYCLED WATER

GAS UTILITY

WATER UTILITY

LIVING MACHINE

H₂O

BLACK WATER

GRAY WATER

SOLID WASTE

COMPOSTING

RAINWATER HARVESTING

TOTAL PRIMARY ENERGY

GAS

[CPS]

ELECTRICITY

COOLING

NATURAL GAS

POTABLE WATER

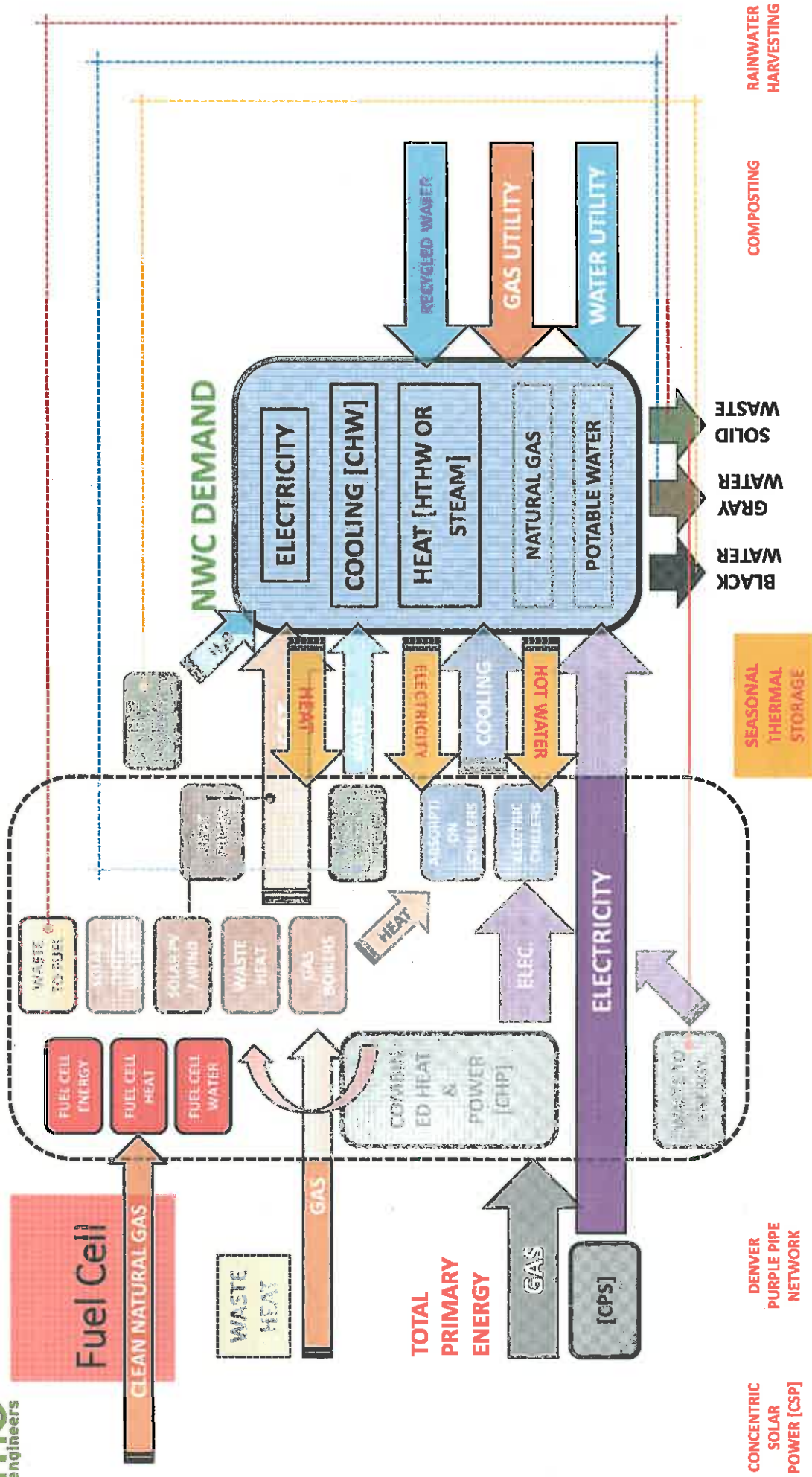
GAS UTILITY

WATER UTILITY

RECYCLED WATER

RAINWATER HARVESTING

ON-SITE PLANT



The Decision Tree

- Why?
- When?
- What?
- How?

Steps to Develop the NWC District Energy System

1. **Assess (ideas & strategies)**
2. **Facilitate (finance) ...?**
 - Cost benefit & payback analyses
3. **Further develop**
 - Multi-stakeholder coordination framework
4. **Integrate**
 - Into NWC Phasing
5. **Map**
 - NWC energy demand & evaluate local energy resources
6. **Determine**
 - Relevant policy considerations
7. **Carry out**
 - Project feasibility analysis
8. **Develop**
 - The business plan
9. **Analyze**
 - Procurement options/network
10. **Set (quantifiable, reportable & verifiable success indicators)**

The Way Forward...

Decision Matrix