



Cypress County

DROUGHT MANAGEMENT PLAN

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DOCUMENT CONTROL

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Public Works Director	Kim Dalton		
Utilities Supervisor	Doran Jensen		
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Parks and Recreation	All directors		
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ACRONYMS AND ABBREVIATIONS

Acronym / Abbreviation	Definition
AEP	Alberta Environment and Parks
AHS	Alberta Health Services
CAO	Chief Administrative Officer
City	City of Medicine Hat
DEM	Director of Emergency Management
ECWC	East Cypress Water Co-Op
EOC	Emergency Operations Centre
IWCC	Intrabasin Watershed Coordinating Committee
MAA	Master Agreement on Apportionment
MEMP	Municipal Emergency Management Plan
Plan	Drought Management Plan
REMP	Regional Emergency Management Plan
SDWC	South Dunmore Water Co-Op
SSR	South Saskatchewan River
SSRB	South Saskatchewan River Basin
WSM	Water Shortage Management
WSWC	West Side Water Co-Op
WTP	Water Treatment Plant

INTRODUCTION

PURPOSE

The purpose of the Drought Management Plan (the Plan) is to outline the procedures established by Cypress County (County) to be followed in the event of a drought. The Plan serves as the foundation for a prioritized, systematic framework of actions and measures to be implemented during progressive stages of drought management.

The Plan covers response elements for the following County departments:

1. Corporate Communications
2. Emergency Management Services
3. Utilities Department
4. Public Works
5. Parks and Recreation
6. Fire Department

DROUGHT CONDITIONS

Drought is a prolonged period of abnormally low precipitation leading to a water supply or flow that is below average for the time of year. Severe or prolonged drought conditions can impact the County's ability to provide adequate treated water to all customers.

The County's water supply is drawn from the South Saskatchewan River (SSR). Originating at the confluence of the Bow River and Oldman River west of Medicine Hat at Grassy Lake, the SSR is part of the watershed known as the South Saskatchewan River Basin (SSRB). With headwaters originating in the Rocky Mountains, the County's water supply is susceptible to drought conditions existing throughout the province.

Drought conditions within the SSRB are the result of reduced snowfall and rainfall. In turn, this leads to a sustained period of below average spring runoff into reservoirs, which leads to a decline in storage and supply security. These conditions are monitored by the Intra-basin Watershed Coordinating Committee (IWCC) and are communicated to the County.

GOAL

The severity of drought conditions can range from mild to critical. Depending on the extent of the conditions, potential exists for a drought to lead to a shortage in the County's water supply from the City of Medicine Hat and/or inability for the Hilda Water Treatment Plant (WTP) to maintain adequate pumping capacity. Therefore, it is important that the County has a pre-established set of guidelines to be followed in order to mitigate or prevent the impacts of a water shortage emergency situation.

Effective drought management allows the County to protect the integrity of potable water supply with particular regard for domestic water use, sanitation, and fire protection in order to safeguard or preserve public health and safety.

IMPLEMENTATION

The Plan applies to all entities utilizing the County's water supply. The service area is located within the municipal boundaries of the County Hamlets, but also includes:

7. Bulk supply to the East Cypress Water Coop
8. Bulk supply to the South Dunmore Water Coop
9. Bulk water supply gates to West Side Water Co-Op (WSWC).
10. Bulk water truck fill stations located in Irvine, Dunmore, Seven Persons, and Hilda.

The Plan will be initiated at the discretion of the Utilities Supervisor. Triggers for initiation of the Plan may include forecasted adverse impacts of a water supply shortage, a water shortage emergency condition, or the anticipation of a call for mandated water conservation measures by AEP.

Alternately, the Plan may also be implemented based on direction from AEP and/or suggestion from the IWCC in order to align with measures needed to meet the requirements of the Master Agreement on Apportionment (MAA). Through the MAA, Alberta must maintain a minimum flow of 42.5 m³/s, or one-half of the natural flow, at the confluence of the Red Deer River and SSR at all times throughout the year. Operationally, AEP aims to maintain this flow rate at the monitoring gauge located on the Finlay Bridge within Medicine Hat. The County should prepare for license restrictions as the flow rate of the SSR approaches or falls below 42.5 m³/s.

The AEP monitoring gauge operates during the spring to fall. Recorded flow rates can be found at <http://rivers.alberta.ca/>.

DOCUMENT REVIEW

The Plan shall be reviewed every three years or as required by the Utilities Supervisor. Following three consecutive years of drought, the Plan shall be modified to incorporate long-term water conservation measures.

GENERAL PROCEDURES

Because the severity, timing, and duration of a drought is highly unpredictable, the Plan serves as a guideline for actions that may be taken throughout escalating drought management stages. Should AEP provide specific direction on actions to be taken, the provided direction shall prevail over the provisions of the Plan.

The following provides an overview of actions to be completed in the event of a drought:

1. DROUGHT IDENTIFICATION

Forecasts for drought conditions within the SSRB are communicated by the IWCC at annual meetings held during the spring. Once the IWCC has forecast a drought, the Utilities Supervisor shall monitor river flow levels as well as the County's water demand. Communication with AEP/IWCC shall continue as necessary in order to ensure the County is aware of changes in the forecasted conditions.

INITIAL CONTACTS

Once drought conditions have been identified to be of concern by the Utilities Supervisor, they will be communicated to the following:

- a) The Director of Emergency Management (the DEM)
- b) The Public Works Director
- c) The Chief Administrative Officer (the CAO)
- d) Any applicable stakeholders including, but not limited to:
 - i. Impacted County Departments
 - ii. Water Coops
 - iii. Public
 - iv. Alberta Health Service (AHS)
 - v. Community Recreation Associations

2. RESPONSE ACTIONS

APPOINTING DROUGHT MANAGEMENT ADVISOR(S)

The Utilities Supervisor shall appoint Drought Management Advisor(s) as required to ensure effective implementation of the Plan. The Drought Management Advisors must possess the qualifications and experience to effectively collect and assess the technical information associated with a drought to a high degree of accuracy. The first advisor appointed would normally be the Senior Utility Operator, then depending on the severity of the drought, and if more assistance was needed, would then include other Utility Operators.

DETERMINING ADVANCEMENT OF DROUGHT STAGES

Various actions are required from each department as the stages progress and severity of the County's actions increase. As the stages progress and the severity of actions increase, so does

the decision-making hierarchy. The following shall be responsible for declaring the escalation/de-escalation of the Plan's stages:

- a) Stage 1: Utilities Supervisor
- b) Stage 2: Public Works Director, with recommendation from Utilities Supervisor
- c) Stage 3: CAO, with recommendation from Public Works Director
- d) Stage 4: CAO, with recommendation from Public Works Director and DEM

COMMUNICATING DROUGHT CONDITIONS

The Utilities Supervisor shall ensure that the provisions of the Plan are communicated to applicable stakeholders. Stakeholders shall then be responsible for communicating information as required. The Utility Supervisor shall monitor, or facilitate the monitoring of, and report on current conditions to the Public Works Director. Monitored conditions include, but are not limited to:

- a) Drought conditions in the SSR
- b) Current AEP Water Shortage Management (WSM) stages

MONITOR DROUGHT CONDITIONS

The Drought Management Advisor(s) shall monitor, or facilitate the monitoring of, and report on current conditions to the Utilities Supervisor. Monitored conditions include, but are not limited to:

- a) WTP pumping capacity
- b) Parks and Recreation water usage
- c) Public Works water usage
- d) Effectiveness of water conservation efforts

WATER CONSERVATION MEASURES

The County shall implement both voluntary and mandatory water conservation measures in order to lessen water demand. Voluntary actions shall be prevalent in the early stages of the Plan to promote short-term reduction of non-essential water use. The Communications Assistant shall encourage voluntary water conservation measures to the public by recommending opportunities for customers to reduce water use with the least impact to lifestyle. Mandatory actions shall be implemented should existing measures do not provide sufficient reduction in water demand. Mandatory water conservation measures shall be implemented as stated in the County's By-Laws: "Water restrictions in all or part of the County may be set out by any method and during any period upon such notice as determined by the C.A.O. or his/her designate." Enforcement of those measures would be carried out ultimately discontinuing the service as determined by the C.A.O. or his/her designate. Should the drought conditions create additional emergency action, a State of Local Emergency also grants a wide variety of powers to the County.

COUNTY WATER CONSERVATION MEASURES

The County shall lead by example throughout the implementation of the Plan to demonstrate the commitment to managing the impacts of drought. All departments shall implement mandatory water conservation measures at or above the measures expected of entities outside of the County. Additionally, departments with significant water usage must be able to initiate water conservation measures immediately upon instruction to do so.

DETERMINING THE TERMINATION OF DROUGHT STAGES

A stage ends when the entity responsible for initiating the stage declares, after considering the recommendation provided by the Utilities Supervisor, that the drought conditions leading to the declaration either no longer exist, have been mitigated, or have been escalated to a higher stage.

3. FOLLOW UP ACTIONS

The County shall carry out an after-action review of all actions taken after drought conditions have subsided. Reviewing response actions ensure that all possible management actions were taken to protect the public's health and safety. Deficiencies will be identified and addressed in future updates of the Plan.

ROLES AND RESPONSIBILITIES

The Plan identifies the following roles and responsibility for each entity involved throughout the escalating drought management stages:

CHIEF ADMINISTRATIVE OFFICER

The CAO shall serve as the liaison with Council and shall provide corporate resources and support where available and within his/her authority to direct business continuity in support of the event.

PUBLIC WORKS DIRECTOR

The Public Works Director shall serve as the primary liaison between all impacted Stake holders and shall provide strategic direction and support where the stages progress in severity and/or where conflicting departments and/or parties require mediation.

UTILITIES SUPERVISOR

The Utilities Supervisor shall assume the overall management of the incident and delegate tasks and responsibilities to others in the role of Incident Commander until the DEM states otherwise. The Utilities Supervisor shall provide strategic direction throughout all stages of the Plan.

It is the responsibility of the Utilities Supervisor to:

1. Maintain communication with AEP and the IWCC
2. Assess the potential risk of drought conditions to County operations
3. Provide recommendation for escalation/de-escalation of drought response stages based on risk assessment to the Public Works Director
4. Evaluate and report on the effectiveness of the Plan
5. Provide additional information as requested

The Utilities Supervisor oversees the Drought Management Advisor(s) and may delegate all tasks as required by current drought conditions.

EMERGENCY MANAGEMENT

The DEM shall monitor the implementation of the Plan and shall provide support where available. The DEM shall activate the EOC and implement other plans as required.

DROUGHT MANAGEMENT ADVISOR(S)

The Drought Management Advisor(s) i.e., Senior Utility Operator and then other Utility Operators if needed, shall serve as subject matter experts and department liaisons to ensure the successful implementation of the Plan.

The team of Drought Management Advisors shall be comprised of interdepartmental technical people representing each group of stakeholders impacted by drought conditions. The Drought Management Advisor(s) shall be appointed as required by the Utilities Supervisor in order to ensure effective implementation of the Plan.

It is the responsibility of the Drought Management Advisor(s) to:

1. Maintain communication with the Utilities Supervisor
2. Assess the potential risk of drought conditions to County operations
3. Provide recommendation for escalation/de-escalation of drought response stages based on risk assessment to the Utilities Supervisor
4. Evaluate and report on the effectiveness of the Plan
5. Provide additional information as requested

COMMUNICATIONS ASSISTANT

The Communications Assistant shall serve as liaison between the impacted stakeholders and the media. The Communications Assistant shall relay current information to the public or assist in the relay as stated in the County's Municipal Emergency Management Plan (MEMP). Additionally, outreach shall be enhanced in order to ensure awareness of voluntary and mandatory water conservation measures and how to achieve them.

PARKS AND RECREATION

Parks and Recreations shall monitor and report on water. Applicable water conservation measures shall be implemented as required by the current response stage

STAKEHOLDERS

Applicable stakeholders shall monitor and report on water usage upon instruction from the Utilities Supervisor and/or Drought Management Advisor(s) to do so. Applicable water conservation measures shall be implemented as required by the current response stage.

Stakeholders may include any or all of the following:

1. Other County departments.
2. West Side Water Co-Op
3. South Dunmore Water Co-Op
4. East Cypress Water Co-Op
5. Industry and Businesses
6. Public,
7. AHS and,
8. Community Recreation Associations

Other impacted County departments may include:

1. Fire Service.
2. Public Works
3. By law Enforcement; and
4. Parks & Recreation.

The public water conservation measures outlined in the Plan apply to residents within the County Hamlet's municipal boundaries, and Water Co-Ops. Industry water conservation measures apply to all industrial corporations, and businesses not operating under separate water licenses as well as all other County departments not identified in the Plan.

All other stakeholders shall be advised of current conditions as required. Emergency Management shall assist Cypress County as per the current REMP agreement between the City of Medicine Hat, Cypress County and Redcliff.

Dependent on drought conditions, Cypress County will monitor River levels and implement water restrictions when the SSR is below 42.5 m³/s and will only operate on Pre-IDP water volumes from the City, so as to comply with our water license requirements.

DROUGHT RESPONSE STAGES SUMMARY

The drought management stages included in the Plan provide a guideline of actions to be taken throughout escalating drought conditions.

It is important to note that due to the variability of drought conditions and their impact on the County’s water supply, the outlined actions are subject to change based on the discretion of AEP, the CAO, Public Works Director, and/or Utilities Supervisor, appointed to ensure effective mitigation the impacts of drought.

Summary of Drought Response Stages			
Stage	Level	Triggers	Actions
1	Warning	AEP implements Stage 1 WSM	Appoint Drought Management Advisor(s) to monitor, evaluate, and prepare the County for the risk of worsening drought conditions.
		SSR approaching 42.5 m ³ /s	Increase drought preparation messaging to advise public and industry on potential water rationing measures.
2	Mild	AEP implements Stage 2 WSM	Monitor, evaluate, and prepare for the risk of escalating drought conditions and minimize water demand.
		SSR less than 42.5 m ³ /s	
3	Moderate	AEP implements Stage 3 WSM	Monitor, evaluate, and prepare for the risk of escalating to critical drought conditions and limit water usage to minimum needs to maintain operational status.
		Increased threat to WTP’s ability to maintain capacity	
4	Emergency	AEP implements Stage 4 WSM	EOC activation and implementation of applicable plans as required including, but not limited to, the Municipal Emergency Management Plan and Regional Emergency Management Plan.
		Loss of supply	

STAGE 1: WARNING

In this stage, the possible conditions are as follows:

- River flow is above, but approaching, the 42.5 m³/s apportionment requirement
- Forecasted drought by IWCC
- Low-flow advisory issued by AEP
- Stage 1 WSM issued by AEP
- The Hilda WTP is able to maintain adequate pumping capacity
- Potable water supply from the City of Medicine Hat has adequate supply.
- There is no threat of a loss of water supply
- There is no threat to public health and safety

Initiation

The Utilities Supervisor shall be responsible for initiating stage 1 of the Plan

Triggers AEP/IWCC has communicated Stage 1 WSM
River flow approaching 42.5 m³/s

STAGE 1: WARNING RESPONSE ACTIONS

Utilities Supervisor

Receive information/direction from AEP/IWCC

- Review information provided by AEP/IWCC and current forecast
- Coordinate follow-up reviews with AEP/IWCC
- Respond with information as requested
- Initiate any further action directed by AEP/IWCC, if required

Contact DEM to brief on situation

- Brief DEM on current situation and forecast provided by AEP/IWCC

Contact Public Works Director to brief on situation

- Brief Public Works Director on current situation and forecast provided by AEP/IWCC

Contact Emergency Services Supervisor to brief on situation.

- Advise Emergency Services Supervisor that Stage 1 drought response plan is in effect.

Appoint Drought Management Advisor(s)

- Brief Drought Management Advisor(s) on current situation and provide additional direction as required
- Provide information for follow-up reviews with AEP/IWCC if required.

Oversee all actions carried out by Drought Management Advisor(s)

- Ensure communication with stakeholders
- Communicate advice from Drought Management Advisor(s) as required
- Delegate tasks as required
- Engage Drought Management Advisor(s) to obtain information as required

Engage stakeholders to review current situation

- Communicate and/or coordinate meeting with County departments including, but not limited to, Parks and Recreation, Emergency Management, Corporate Communications, and other applicable County departments as required
- Communicate and/or Coordinate meeting with representatives from West Side Water Co-Op, South Dunmore Water Co-Op, East Cypress Water Co-Op,
- Review current situation and AEP/IWCC forecast
- Review the Plan for specific actions required from each department/stakeholder
- Communicate voluntary and/or mandatory water conservation measures and advise to review internal water conservation practices

Prepare media statement to advise on current situation

- Coordinate with Communication Assistant for media release
- Develop communication statement requesting public water conservation measures.

Monitor SSR

- Monitor SSR flow rate weekly

Drought Management Advisor(s)

Receive information/direction from Utilities Supervisor

- Review information provided by AEP/IWCC and current forecast
- Respond with information as requested

Review the Plan

- Review the current version of the Plan
- Identify differences between direction from AEP (if direction is provided) and the Plan

Assess risk of current and continuing drought conditions

- Complete assessment of drought conditions using the Plan's Risk Assessment Considerations outlined in Appendix A

Evaluate effectiveness of the Plan

- Evaluate the effectiveness of all actions take under the Plan

Report information and recommendation to Utilities Supervisor

- Report any pertinent information to the Utilities Supervisor

Director of Emergency Management (DEM)

Receive information from Utilities Supervisor

- Review information provided by Utilities Supervisor
- Provide assistance and/or guidance as requested

Utilities Department

Monitor WTP

- Monitor WTP pumping capacity
- Report information weekly to Utilities Supervisor and/or Drought Management Advisors.

Parks and Recreation

Monitor water usage

- Monitor weekly water usage
- Report information weekly to Utilities Supervisor and/or Drought Management Advisor(s)

Public Works

Monitor water usage

- Monitor weekly water usage
- Report information weekly to Utilities Supervisor and/or Drought Management Advisor(s)

Communications Assistant

Engage Media

- Review statement developed by Utilities Supervisor
- Contact media venues for statement to public as dictated by the Communications Assistant.
- Increase water conservation messaging
- Manage Cypress County’s webpage on water conditions.

Public Works Director

Contact CAO to brief on situation

- Brief CAO on current situation and forecast provided by AEP/IWCC as required

Stakeholders: West Side Water Co-Op, South Dunmore Water Co-Op, East Cypress Water Co-Op, & Hilda Raw water Co-Op

Receive information from Utilities Supervisor

- Receive information provided by AEP/IWCC and current forecast
- Review license agreements and direction from Utilities Supervisor as required

Develop/review drought management plan

- Develop and/or review internal plans

Review/implement local water conservation measures

- Implement water conservation measures as required, such as limiting grass watering, and only using dishwashers and washing machines with full loads, turn off fountain or other water features, etc.
- Cease water main flushing
- Post signs at main entrances, if possible, e-mail notifications where applicable, or distribute notices to conserve water and warn of possible water restrictions.

STAGE 1: WARNING WATER CONSERVATION MEASURES

The following water conservation measures shall be implemented immediately upon the declaration of a stage 1 drought and shall remain in effect until the conclusion of the water conservation period.

Water Conservation Measures*	
County Departments	Mandatory
	Develop and/or review operational water conservation measures. Water conservation practices implemented to minimize non-essential water use.
Utilities	Mandatory
	Cease sewer flushing operations. Cease Unidirectional Flushing of water mains.
Parks and Recreation	Mandatory
	Implement stage 1 of the Water Conservation Plan. Refer to Appendix B for further information.
Fire Suppression	
	Firefighting operations will be unaffected during this stage. Firefighters shall reduce the amount of water for training purposes.
Public	Mandatory
	No actions at this time.
Industry	Mandatory
	No actions at this time.
	Voluntary
	Implement water conservation measures to minimize non-essential water use. (ex. Limiting grass irrigation, using washing machines and dishwashers only on full loads, turn off water fountains/features, etc.)
	Voluntary
	Develop and/or review operational water conservation measures. Water conservation practices implemented to minimize non-essential water use.

*Subject to change based on direction from AEP/IWCC

STAGE 2: MILD DROUGHT CONDITIONS

In this stage, the possible conditions are as follows:

- River flow has fallen below the 42.5 m³/s apportionment requirement
- Low-flow advisory issued by AEP
- Stage 2 WSM issued by AEP
- The Hilda WTP is able to maintain adequate pumping capacity
- Potable water supply from the City of Medicine Hat is sufficient.
- There is no threat of a loss of water supply
- There is no threat to public health and safety

Initiation

The Public Works Director, upon recommendation from the Utilities Supervisor, shall be responsible for declaring the advancement to stage 2 of the Plan

Triggers AEP/IWCC has communicated stage 2 WSM
River flow has fallen below 42.5 m³/s

Goals Monitor, evaluate, and prepare the County for the risk of escalating drought conditions and minimize water demand
20% water use reductions
Post an alert on the Cypress County Website on drought conditions and the need for mandatory outdoor watering restrictions to reduce water consumption and use and also other voluntary efforts to reduce water consumption and use.

STAGE 2: RESPONSE ACTIONS

Utilities Supervisor

Receive information/direction from AEP/IWCC

- Review information provided by AEP/IWCC and current forecast
- Coordinate follow-up reviews with AEP/IWCC and Drought Management Advisor(s)
- Review information provided by AEP/IWCC and current forecast
- Respond with information as requested
- Initiate any further action directed by AEP/IWCC, if required

Contact DEM to brief on situation

- Brief DEM on current situation and forecast provided by AEP/IWCC

Contact Public Works Director to brief on situation

- Brief Public Works Director on current situation and forecast provided by AEP/IWCC

Contact Emergency Services Supervisor to brief on situation.

- Advise Emergency Services Supervisor that Stage 2 drought response plan is in effect.

Contact Drought Management Advisor(s)

- Brief Drought Management Advisor(s) on current situation and provide additional direction as required
- Provide information for follow-up reviews with AEP/IWCC
- Engage Drought Management Advisor(s) to obtain information as required.
- Delegate tasks as required to Drought Management Advisors.

Engage stakeholders to review current situation

- Coordinate meeting with County departments including, but not limited to, Parks and Recreation, Emergency Management, Corporate Communications, and other applicable County departments as required
- Communicate and/or coordinate meeting with representatives from South Dunmore Water Co-Op, WSWC, East Cypress Water Co-Op
- Review current situation and AEP/IWCC forecast

- Review the Plan for specific actions required from each department/stakeholder
- Communicate voluntary and/or mandatory water conservation measures
- Coordinate follow-up reviews

Monitor SSR

- Monitor SSR flow rate weekly
- Report information weekly to Public Works Director and/or Drought Management Advisor(s)

Drought Management Advisor(s)

Receive information/direction from Utilities Supervisor

- Respond with information as requested
- Review information provided by AEP/IWCC and current forecast

Review the Plan

- Review the current version of the Plan
- Identify differences between direction from AEP (if direction is provided) and the Plan

Assess risk of current and continuing drought conditions

- Complete weekly assessment of drought conditions using the Plan's Risk Assessment Considerations outlined in Appendix A

Evaluate effectiveness of the Plan

- Evaluate the effectiveness of all actions take under the Plan

Report information and recommendation to Utilities Supervisor

- Report any pertinent information to the Utilities Supervisor

Director of Emergency Management (DEM)

Receive information from Utilities Supervisor

- Review information provided by Utilities Supervisor
- Provide assistance and/or guidance as requested

Utilities Department

Monitor WTP

- Monitor WTP pumping capacity
- Report information weekly to Utilities Supervisor and/or Drought Management Advisor(s)
-

Public Works

Monitor water usage

- Monitor weekly water usage
- Report information weekly to Utilities Supervisor and/or Drought Management Advisor(s)

Communications Assistant

Engage Media

- Review statement developed by Utilities Supervisor
- Contact media venues for statement to public as dictated by the Communications Assistant.
- Increase water conservation messaging
- Manage Cypress County's webpage on water conditions.

Public Works Director

Contact CAO to brief on situation

- Brief CAO on current situation and forecast provided by AEP/IWCC as required

- Review stage 3 of the plan.

Chief Administrative Officer

Contact Council to brief on situation

- Brief Council on current situation and forecast provided by AEP/IWCC as required

Stakeholders: West Side Water Co-Op, South Dunmore Water Co-Op, East Cypress Water Co-Op, & Hilda Raw water Co-Op

Receive information from Utilities Supervisor

- Receive information provided by AEP/IWCC and current forecast
- Review license agreements and direction from Utilities Supervisor as required

Develop/review drought management plan

- Review internal plans

Review/implement local water conservation measures

- Implement water conservation measures as required, such as, only using dishwashers and washing machines with full loads, turn off fountain or other water features, etc.
- Cease flushing of water mains.
- Post signs at main entrances, if possible, e-mail notifications where applicable, or distribute notices to conserve water and of water restrictions. Outdoor Water Restrictions: Outdoor watering from 8:00 pm to midnight. Odd house numbers water Mon, Wed, Fri and Even house numbers water Tue, Thur, Sat. Prohibited: Use of decorative outdoor water features, washing outdoor surfaces, and filling swimming pools/hot tubs.
- If possible, use irrigation sources or ground water wells for outdoor watering instead of potable water sources.
-

STAGE 2: WATER CONSERVATION MEASURES

The following water conservation measures shall be implemented immediately upon the declaration of a stage 2 drought and shall remain in effect until the conclusion of the water conservation period.

Water Conservation Measures*	
County Departments	Mandatory
	Water conservation practices to be implemented to minimize non-essential water use.
Utilities	Mandatory
	Cease unidirectional/hydrant flushing operations, except for repairs or where required to maintain compliance obligations. Cease sewer flushing operations.
Parks and Recreation	Mandatory
	Implement stage 2 of the Water Conservation Plan. Refer to Appendix B for further information.
Fire Suppression	
	Firefighting operations are restricted to 30 min from potable water reserves and to minimize potable water taken from reserves. Officer in charge shall call for water tenders for assistance.
Public	Mandatory
	<p>Outdoor Water Restrictions: Outdoor watering from 8:00 pm to midnight. Odd house numbers water Mon, Wed, Fri Even house numbers water Tue, Thur, Sat. Prohibited: Use of decorative outdoor water features, washing outdoor surfaces, and filling swimming pools/hot tubs.</p>
Industry	Voluntary
	<p>Implement water conservation measures to minimize water use and consumption. (ex. Using washing machines and dishwashers only on full loads, stop washing vehicles, etc.)</p>
Industry	Mandatory
	<p>No actions at this time.</p>
Industry	Voluntary
	Water conservation practices to be implemented to minimize non-essential water use.

*Subject to change based on direction from AEP/IWCC

STAGE 3: SEVERE DROUGHT CONDITIONS

In this stage, the possible conditions are as follows:

- River flow is below the 42.5 m³/s apportionment requirement
- Stage 3 WSM issued by AEP
- The Hilda WTP is able to maintain adequate pumping capacity with water conservation efforts
- Potable Water supply from the City of Medicine Hat is sufficient to maintain essential services but approaching threshold.
- There is concern of a loss of water supply
- There is an escalating threat to public health and safety

Initiation

The CAO, upon recommendation from the Public Works Director, shall be responsible for declaring the advancement to stage 3 of the Plan

Triggers AEP/IWCC has communicated stage 3 WSM

Threat of decreased potable water supply from the City of Medicine Hat

Threat to pumping capacity at Hilda WTP

Goals Monitor, evaluate, and prepare the County for the risk of escalating to critical drought conditions and limit water usage to minimum needed to maintain operational status
30% water reduction goal

Post an alert on the Cypress County Website on critical drought conditions and that outdoor grass irrigation is prohibited and the need for mandatory outdoor watering restrictions to reduce water consumption and use, and also other voluntary efforts to reduce water consumption and use.

STAGE 3: RESPONSE ACTIONS

Utilities Supervisor

Receive information/direction from AEP/IWCC

- Review information provided by AEP/IWCC and current forecast
- Coordinate follow-up reviews with AEP/IWCC and Drought Management Advisor(s)
- Respond with information as requested
- Initiate any further action directed by AEP/IWCC, if required

Contact DEM to brief on situation

- Brief DEM on current situation and forecast provided by AEP/IWCC
-

Contact Public Works Director to brief on situation

- Brief Public Works Director on current situation and forecast provided by AEP/IWCC
- Advise on additional water conservation methods as required to maintain operations

Contact Emergency Services Supervisor to brief on situation.

- Advise Emergency Services Supervisor that Stage 3 drought response plan is in effect.

Contact Drought Management Advisor(s)

- Brief Drought Management Advisor(s) on current situation and provide additional direction as required
- Provide information for follow-up reviews with AEP/IWCC
- Request an assessment of water use and WTP water use to determine need for water conservation measures
- Engage Drought Management Advisor(s) to obtain information as required

Engage stakeholders to review current situation

- Communicate and/or coordinate meeting with County departments including, but not limited to, Parks and Recreation, Emergency Management, Corporate Communications, and other applicable County departments as required
- Coordinate meeting with representatives from Alberta Health Services, WSWC, South Dunmore Water Co-Op, East Cypress Water Co-Op,
- Review current situation and AEP/IWCC forecast
- Review the Plan for specific to actions required from each department/stakeholder
- Communicate voluntary and/or mandatory water conservation measures
- Coordinate follow-up reviews

Drought Management Advisor(s)

Receive information/direction from Utilities Supervisor

- Respond with information as requested
- Review information provided by AEP/IWCC and current forecast

Review the Plan

- Review the current version of the Plan
- Identify differences between direction from AEP (if direction is provided) and the Plan

Assess risk of current and continuing drought conditions

- Complete daily assessment of drought conditions using the Plan's Risk Assessment Considerations outlined in Appendix A

Evaluate effectiveness of the Plan

- Evaluate the effectiveness of all actions take under the Plan

Report information and recommendation to Utilities Supervisor

- Report any pertinent information to the Utilities Supervisor

Monitor SSR

- Monitor SSR flow rate weekly
- Report information daily to Utilities Supervisor and/or Drought Management Advisor(s)

Director of Emergency Management (DEM)

Receive information from Utilities Supervisor

- Review information provided by Utilities Supervisor
- Provide assistance and/or guidance as required

Assess if activation of EOC is needed

- Monitor implementation of the Plan to determine need for EOC activation
- Review stage 4 of the Plan

Assist other Water Co-Ops with emergency management needs, if required

- Meet with WSWC, South Dunmore Water Co-Op, East Cypress Water Co-Op, and Hilda Raw Water Co-Op to determine need for assistance
- Assist in the development of drought management plan, if required

Utilities Department

Monitor WTP

- Monitor WTP pumping capacity
- Report information daily to Utilities Supervisor and/or Drought Management Advisor(s)
-

Parks and Recreation

Monitor water usage

- Monitor daily water usage
- Report information daily to Utilities Supervisor and/or Drought Management Advisor(s)

Public Works

Monitor water usage

- Monitor daily water usage
- Report information daily to Utilities Supervisor and/or Drought Management Advisor(s)

Communications Assistant

Engage Media

- Review statement developed by Utilities Supervisor & Public Works Director
- Contact media venues for statement to public as dictated by the Communications Assistant
- Increase water conservation messaging
- Manage Cypress County's webpage on water conditions.

Public Works Director

Prepare media statement to advise on current situation

- Coordinate with Communications Assistant for media release
- Develop communication statement mandating public water conservation measures
- Speak with media

Contact CAO to brief on situation

- Brief CAO on current situation and forecast provided by AEP/IWCC as required

Assess need for additional water conservation measures

- Review information provided by Utilities Supervisor and/or DEM
- Determine need and identify opportunities for additional water conservation measures to lessen water demand
- Communicate additional water conservation measures to CAO, Utilities Supervisor, and DEM, if any

Chief Administrative Officer

Contact Council to brief on situation

- Brief Council on current situation and forecast provided by AEP/IWCC as required

Assess need for additional water conservation measures

- Assist Public Works Director with decision making processes as required

Stakeholders: West Side Water Co-Op, South Dunmore Water Co-Op, East Cypress Water Co-Op, & Hilda Raw water Co-Op

Receive information from Utilities Supervisor

- Receive information provided by AEP/IWCC and current forecast
- Review license agreements and direction from Utilities Supervisor as required

Develop/review drought management plan

- Review internal plans

Review/implement local water conservation measures

- Implement water conservation measures: Limit watering of vegetable gardens to 15 min/day by hand-held measures only. Prohibited: Lawn irrigation. Use of decorative outdoor water features, washing outdoor surfaces, filling swimming pools/hot tubs, and any construction activities.

STAGE 3: WATER CONSERVATION MEASURES

The following water conservation measures shall be implemented immediately upon the declaration of a stage 3 drought and shall remain in effect until the conclusion of the water conservation period.

Water Conservation Measures*	
County Departments	Mandatory
	Limited to minimum potable water use to maintain operational status.
Utilities	Mandatory
	Limited to minimum potable water use to maintain operational status.
Parks and Recreation	Mandatory
	Implement stage 3 of the Water Conservation Plan. Refer to Appendix B for further information.
Fire Suppression	Use from potable water reserves are not available.
	Officer in charge will call for water tenders and source out locations of ground water to be utilized.

	Firefighters will conserve water on the fire apparatus until tenders arrive or ground water is utilized.	
Public Works	Mandatory	
	Limited to minimum potable water use to maintain operational status.	
Public	Mandatory	Voluntary
	<p>Restricted: Limit watering of vegetable gardens to 15 minutes per day and by hand-held means only.</p> <p>Prohibited: Lawn irrigation. Use of decorative outdoor water features, washing outdoor surfaces, and filling swimming pools/hot tubs.</p> <p>Construction activities.</p>	Implement water conservation measures to minimize non-essential water use. (ex. Limiting showers time, bath levels, and toilet flushing)
Industry	Mandatory	Voluntary
	Limited to minimum potable water use to maintain operational status.	Any further actions to reduce water use.

*Subject to change based on direction from AEP/IWCC

STAGE 4: EMERGENCY DROUGHT CONDITIONS

In this stage, the possible conditions are as follows:

- River flow is below the 42.5 m³/s apportionment requirement
- Stage 4 WSM issued by AEP
- The Hilda WTP is unable to maintain adequate pumping capacity or has experienced complete loss of water supply
- Water supply from the City of Medicine Hat is not sufficient.
- A threat exists to public health and safety

Initiation

The CAO, upon recommendation from the Public Works Director and DEM, shall be responsible for declaring the advancement to stage 4 of the Plan

Triggers	AEP/IWCC has communicated stage 4 WSM Loss of potable water supply from the City of Medicine Hat Loss of pumping capacity at Hilda WTP
Goals	EOC activation and implementation of other plans as required, including but not limited to the Municipal Emergency Management Plan, Regional Emergency Management Plan.

STAGE 4: RESPONSE ACTIONS

Utilities Supervisor

- Receive information/direction from AEP/IWCC**
 - Review information provided by AEP/IWCC and current forecast
 - Coordinate follow-up reviews with AEP/IWCC and Drought Management Advisor(s)
 - Respond with information as requested

- Brief DEM and receive further direction**
 - Brief DEM on current situation and forecast provided by AEP/IWCC

- Contact Drought Management Advisor(s)**
 - Brief Drought Management Advisor(s) on current situation and provide additional direction as required
 - Provide information for follow-up reviews with AEP/IWCC
 - Engage Drought Management Advisor(s) to obtain information as required

- Assist with emergency response actions as required**
 - Assist with emergency actions upon direction

Director of Emergency Management (DEM)

- Activate EOC**
 - Activate EOC and initiate plans as required, including but not limited to the Municipal Emergency Management Plan, Regional Emergency Management Plan.

Drought Management Advisor(s)

- Receive information/direction from Utilities Supervisor**
 - Review information provided by AEP/IWCC and current forecast
 - Participate in AEP/IWCC reviews with Utilities Supervisor
 - Respond with information as requested

Review the Plan

- Review the current version of the Plan
- Identify differences between direction from AEP (if direction is provided) and the Plan

Assess risk of current and continuing drought conditions

- Complete daily assessment of drought conditions using the Plan's Risk Assessment Considerations outlined in Appendix A
- Provide recommendation to Utilities Supervisor

Evaluate effectiveness of the Plan

- Evaluate the effectiveness of all actions taken under the Plan

Report information and recommendation to Utilities Supervisor

- Report any pertinent information to the Utilities Supervisor

Assist with emergency response actions as required

- Assist with emergency actions as directed.

Utilities Department

Monitor WTP

- Monitor WTP pumping capacity
- Report information daily to Utilities Supervisor and/or Drought Management Advisor(s) or otherwise directed by DEM

Monitor SSR

- Monitor SSR flow rate daily
- Report information daily to Utilities Supervisor and/or Drought Management Advisor(s) or otherwise directed by DEM

Assist with emergency response actions as required

- Assist with emergency actions upon direction

Parks and Recreation

Assist with emergency response actions as required

- Assist with emergency actions upon direction

Public Works

Assist with emergency response actions as required

- Assist with emergency actions upon direction

Communications Assistant

Engage Media

- Assist with emergency actions upon direction

Public Works Director

Assess need for additional water conservation measures

- Review information provided by Utilities Supervisor and/or DEM
- Determine need and identify opportunities for additional water conservation measures to lessen water demand
- Communicate additional water conservation measures to CAO, Utilities Supervisor, and DEM, if any

Chief Administrative Officer

Contact Council to brief on situation

- Brief Council on current situation

Stake Holders: West Side Water Co-Op, South Dunmore Water Co-Op, East Cypress Water Co-Op, & Hilda Raw water Co-Op

Review/implement local water conservation measures

- Meet with Public Works Director to review license agreements and AEP/IWCC direction
- Develop/implement local water conservation measures, if required by AEP/IWCC
- Water use is prohibited for all non-essential services.

STAGE 4: WATER CONSERVATION MEASURES

The following water conservation measures shall be implemented immediately upon the declaration of a stage 4 drought and shall remain in effect until the conclusion of the water conservation period.

Water Conservation Measures*	
County Departments	Mandatory
	Water use is prohibited for all non-essential services.
Utilities	Mandatory
	Water use is prohibited for all non-essential services.
Parks and Recreation	Mandatory
	Implement stage 4 of the Water Conservation Plan. Refer to Appendix B for further information.
Fire Suppression	Mandatory
	Use from potable water reserves are not available. Officer in charge will call for water tenders and source out locations of ground water to be utilized. Firefighters will conserve water on the fire apparatus until tenders arrive or ground water is utilized.
Public Works	Mandatory
	Water use is prohibited for all non-essential services.
Public	Mandatory
	Water use is prohibited for all non-essential services, if required
Industry	Mandatory
	Water use is prohibited for all non-essential services.

*Subject to change based on direction from AEP/IWCC

ENFORCEMENT

Mandatory water conservation measures shall be implemented as stated in the County's By-Laws: "Water restrictions in all or part of the County may be set out by any method and during any period upon such notice as determined by the C.A.O. or his/her designate." Enforcement of those measures would be carried out ultimately discontinuing the service as determined by the C.A.O. or his/her designate.

VARIANCES

The Utilities Supervisor may grant temporary variance, in writing, for existing water uses otherwise prohibited under the Plan. Temporary variances shall be considered should any conditions exist in which failure to grant such variance may cause an emergency condition adversely affecting the health, sanitation, or fire protection for the public or person requesting such variance and if the following conditions occur:

1. Compliance with the Plan cannot be technically accomplished during the duration of the water supply shortage or other condition for which the Plan is in effect
2. Alternative methods cannot be implemented which will achieve the same level of reduction in water use

Persons requesting an exemption from the provisions of the Plan shall file a request for variance with the County within 5 days after the Plan or a particular response stage has been invoked. All requests for variances shall be reviewed by the Utilities Supervisor and shall include the following:

1. Name and address of the petitioner(s)
2. Purpose of water use
3. Specific provision(s) of the Plan from which the petitioner is requesting relief
4. Detailed statement as to how the specific provision of the Plan adversely affects the petitioner or what damage or harm will occur to the petitioner or others if the petitioner complies with the Plan
5. Description of the relief requested
6. Period of time for which the variance is sought
7. Alternative water conservation measures or other measures the petitioner is taking or proposes to take to meet the intent of the Plan and the compliance date
8. Other pertinent information

Variances granted by the County shall be subject to the following conditions, unless waived or modified by the Utilities Supervisor:

1. Variances granted shall include a timetable for compliance
2. Variances granted shall expire when the Plan is no longer in effect
3. The Utilities Supervisor may cancel the variance if the petitioner has failed to meet specified requirements
4. The Utilities Supervisor may cancel the variance if water conditions have become more severe than anticipated when the variance was granted

No variance shall be retroactive or otherwise justify any violation of the Plan occurring prior to the issuance of the variance.

APPENDICES

APPENDIX A – STAGE ADVANCEMENT CONSIDERATIONS

RISK ASSESSMENT CONSIDERATIONS

Water Supply Conditions

What is the water supply forecast?

- IWCC provides a forecast of conditions within the SSRB in the spring of each year. The forecast considers snowpack, precipitation, and upstream conditions.
- AEP may issue low-flow advisories. Consider upstream conditions in addition to low-flow advisories for the immediate area.
- Upstream conditions play a significant role in the water supply forecast for Medicine Hat. The flow level in the SSR will be significantly impacted by conditions within the Old Man River and Bow River.
- Lower soil moisture levels may create a higher stress on the water supply. Irrigation districts may be regulated when water supply is low, or reservoirs are down.

Is the SSR maintaining adequate flow levels?

- Alberta needs to maintain a flow of 42.5 m³/s in order to meet the requirements of the MAA. AEP aims to maintain this flow at the monitoring gauge located on Finlay Bridge.
- Lower flow levels may have an impact on aquatic species within the SSR. Conditions, such as, depth, velocity, substrate, and cover temperature, and resources, such as food and space, are necessary for the survival of aquatic species.
- Lower flow levels may have an impact on recreational activities within the SSR.

What direction has been provided by AEP?

- AEP may implement WSM stages to mitigate low-flow levels. Direction provided by AEP takes precedence over the Plan. AEP's WSM stages are as follows:
 1. Stage 1: Normal operations; monitoring water shortage potentials in water management areas, preparing for water shortages.
 2. Stage 2: Priority called in a Water Management Area, water shortage response in Water Management Area.
 3. Stage 3: Large scale water shortage with risk to the majority of household users/licensees/traditional agricultural users across multiple water management areas of the SSRD or the entire SSRB.
 4. Stage 4: Due to unforeseen circumstances that could not be mitigated, the Lieutenant Governor in Council may consider declaring an emergency

Are overall conditions improving or worsening?

- IWCC will coordinate a follow-up meeting to provide updates on drought conditions.

Water Demand Conditions

Have we reached peak water demand?

- Peak water demand typically occurs during July.

Are the pumps at the WTP able to keep up with demand?

- It is uncertain at what river level the pumps at the WTP and Wells will lose pumping capacity. The pumps need to be monitored closely as the threshold is approached so that mitigating and responsive actions can be taken to lessen the demand in order to prevent a loss of supply.
- The pumps at the River Wells supply both the potable water system for Hilda and Schuler.
- If water conservation measures are not sufficient to maintain adequate supply, the DEM may need to activate the EOC.

How successful are other communities at maintaining water demands?

- Redcliff may be experiencing the same pressures. Communication may be beneficial in determining the conditions of intakes and pumping capacity.

Are current water conservation measures effective?

- The CAO, Public Works Director, and /or Utilities Supervisor may choose to pursue additional or alternate water conservation measures to lessen water demand and avoid progression to a higher drought management stage.

Impacts of Water Conservation Measures

What are the financial and legal implications of rationing the water supply?

- Cost to County and to customers, including but not limited to, legal implications from loss of production from industrial customers.

How much water can stakeholders ration before shutting down?

- Consider the minimal water usage needed to maintain operational status. For instance, the minimal water volume for the Co-Ops is currently unknown.
- When would truck fill stations be shut down?

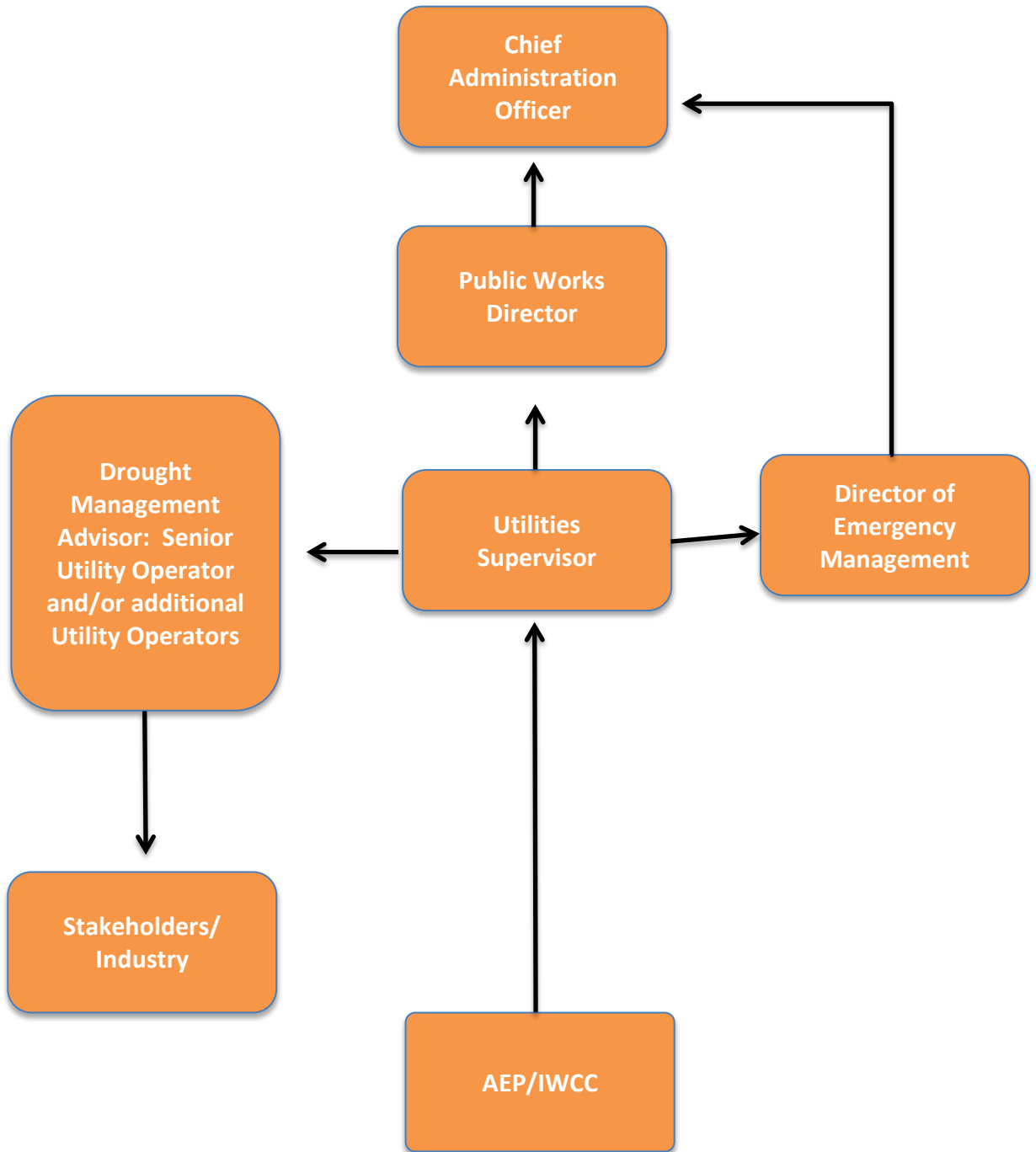
Will there be an impact on public health and safety?

- The County needs to supply any available potable water supply for fire suppression.
- If there is an impact to public health and safety, EOC activation may be required and AHS shall be notified of the situation.

How long can water conservation measure be implemented?

- Consider the long-term implications of water conservation measures (e.g., loss of parks, loss of revenue from sporting events, health impacts to the population, industrial operations, etc.)

COMMUNICATION TREE



APPENDIX B – SUMMARY OF CYPRESS COUNTY WATER CONSERVATION MEASURES

STAGE 1 MEASURES

Stage 1 Water Conservation Measures		
Park Class/Water Feature	Cypress County Watering Plan	Normal Operating Standard
Dunmore Shelter Belt	Once every 2 months	Once per month
Hilda Ball Diamond	Off	Varying times
Water Features/Fountains	Off	Varying times
Des Blume-Edgewater Green Space	2-3 times / week	3 -5 times /week
Flower Beds (Irvine)	2-3 times / week	3 -5 times /week
Community Parks (Seven Persons, Suffield, Hilda, Irvine, Walsh, Veinerville, Dunmore)	2-3 times / week	3 -5 times /week
Truck Fills	Daily from 6am to 11pm	Daily from 6am to 11pm
Cemetery	N/A	N/A
Campground	N/A	N/A

STAGE 2 MEASURES

Stage 2 Water Conservation Measures		
Park Class/Water Feature	Cypress County Watering Plan	Normal Operating Standard
Dunmore Shelter Belt	Off	Once per month
Hilda Ball Diamond	Off	Varying times
Water Features/Fountains	Off	Varying times
Des Blume-Edgewater Green Space	2 times / week max 30 min duration	3 -5 times /week
Flower Beds (Irvine)	2 times / week max 30 min duration	3 -5 times /week
Community Parks (Seven Persons, Suffield, Hilda, Irvine, Walsh, Veinerville, Dunmore)	2 times / week max 30 min duration	3 -5 times /week
Truck Fills	Restricted to cap at max 18 m3/month.	Daily from 6am to 11pm
Cemetery	N/A	N/A
Campground	N/A	N/A

STAGE 3 MEASURES

Stage 3 Water Conservation Measures		
Park Class/Water Feature	Cypress County Watering Plan	Normal Operating Standard
Dunmore Shelter Belt	Off	Once per month
Hilda Ball Diamond	Off	Varying times
Water Features/Fountains	Off	Varying times
Des Blume-Edgewater Green Space	Off	3 -5 times /week
Flower Beds (Irvine)	Off	3 -5 times /week
Community Parks (Seven Persons, Suffield, Hilda, Irvine, Walsh, Veinerville, Dunmore)	Off	3 -5 times /week
Truck Fills	Restricted to cap at max 12 m3/month.	Daily from 6am to 11pm
Cemetery	N/A	N/A
Campground	N/A	N/A

STAGE 4 MEASURES

Stage 4 Water Conservation Measures		
Park Class/Water Feature	Cypress County Watering Plan	Normal Operating Standard
Dunmore Shelter Belt	Off	Once per month
Hilda Ball Diamond	Off	Varying times
Water Features/Fountains	Off	Varying times
Des Blume-Edgewater Green Space	Off	3 -5 times /week
Flower Beds (Irvine)	Off	3 -5 times /week
Community Parks (Seven Persons, Suffield, Hilda, Irvine, Walsh, Veinerville, Dunmore)	Off	3 -5 times /week
Truck Fills	Restricted to cap at max 6 m3/month.	Daily from 6am to 11pm
Cemetery	N/A	N/A
Campground	N/A	N/A