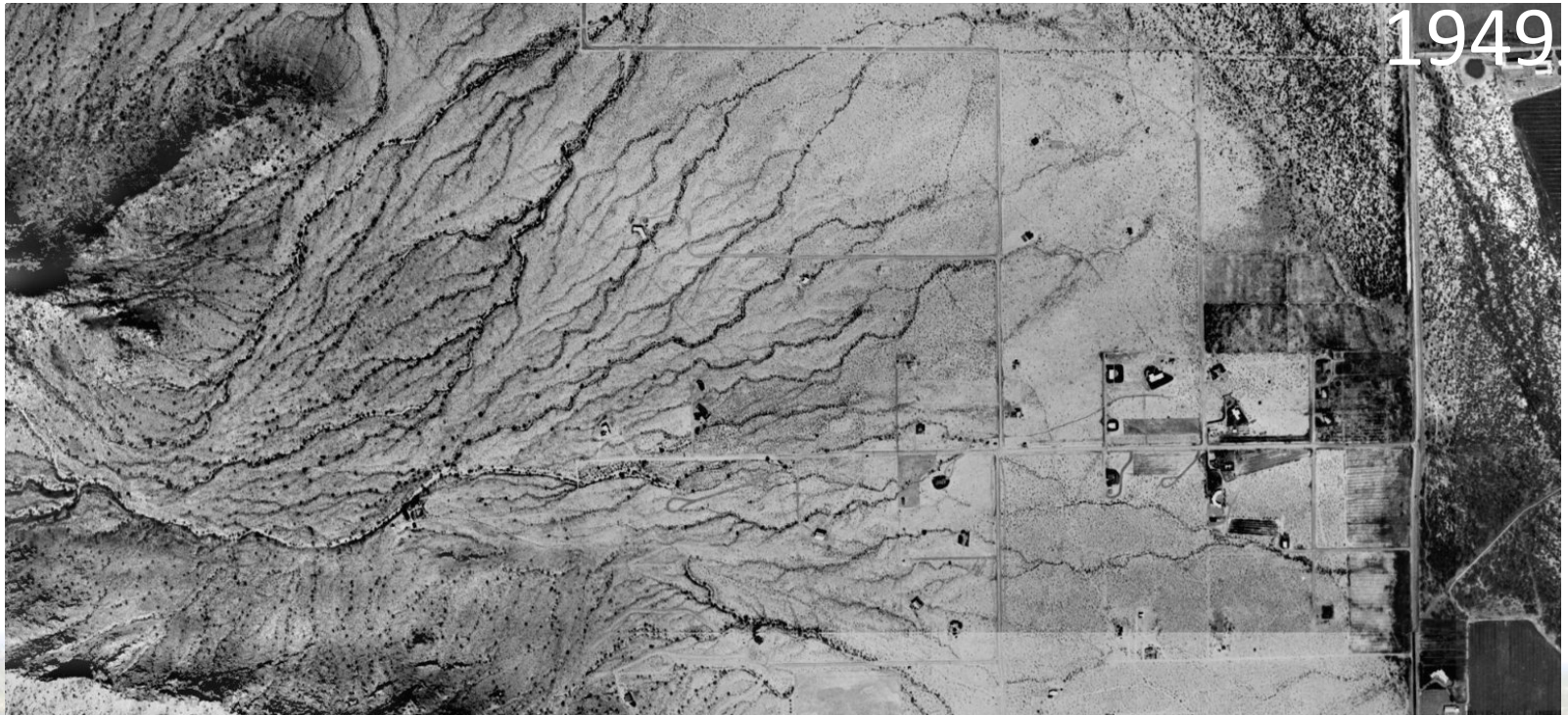




# CHENEY WATERSHED ALTERNATIVES ANALYSIS

March 23<sup>rd</sup>, 2017



## KEY QUESTION

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**What is the philosophical position of the Town Council regarding the provision of storm water services by the municipality?**



# AGENDA

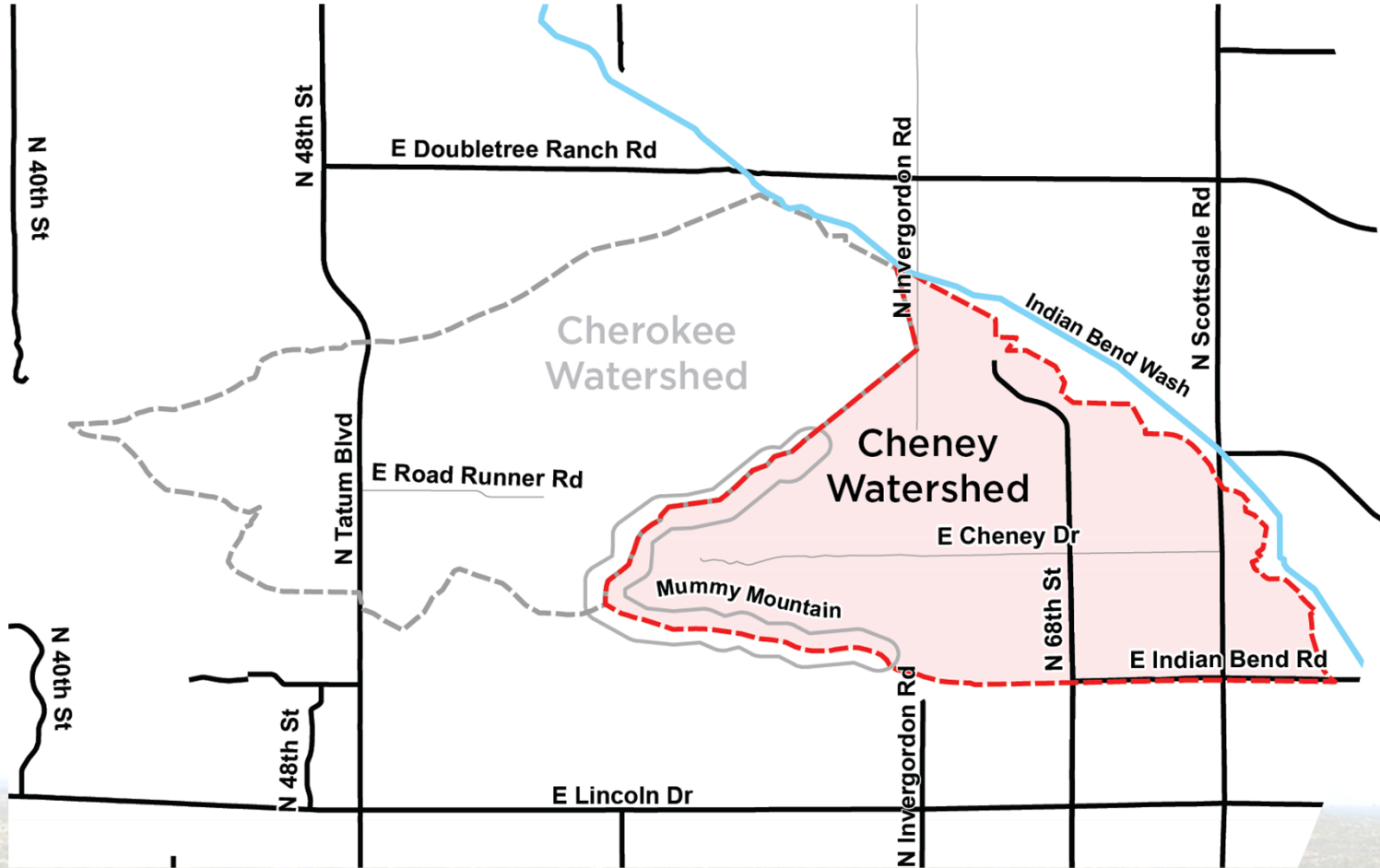
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- 1. Summary of February 9<sup>th</sup> Council Presentation**
- 2. Cheney Watershed Options Refined**
- 3. Recommended Option**



March 23<sup>rd</sup>, 2017

# CHENEY WATERSHED



March 23<sup>rd</sup>, 2017



# CHENEY WATERSHED OPTIONS

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- 1. Continue the status quo**
- 2. Plan for and implement the lowest cost option (\$11M) with a lower level of protection**
- 3. Plan for and implement the highest cost option (\$19M) with highest level of protection**
- 4. Use mapping and data collected to act as a policy guide for future private development**



# REFINED OPTIONS

## Alternatives Analysis Continuum



## REFINED OPTIONS

### Option 1: Status Quo

#### Includes:

- Rely on the updated Storm Drainage Design Manual to guide private development
- Construct storm drainage facilities with roadway projects as necessary
- Town cleans roadways and public storm drainage structures
- Residents responsible for wash maintenance and private storm drainage structures, lot by lot solutions
- Meet federal and state requirements for stormwater management, participate in the NFIP



# REFINED OPTIONS

## Status Quo

### Pros

- Small financial investment
- Flood insurance available to residents
- Some regulatory control

### Cons

- Minimal flood mitigation
- Flood information provided by others
- No regional scale solutions





# REFINED OPTIONS

## Status Quo impact on CIP

- **Cheney and Cherokee Watershed Study**
- **Future Watershed Studies Eliminated (\$1M removed from CIP)**
- **Storm Water Infrastructure Projects Eliminated**

<b>Stormwater</b>					
Hummingbird Lane/Quartz Mountain Road	2019-07	425,000			425,000
Berneil Channel Improvements	2019-08	400,000	3,600,000		4,000,000
Scottsdale Rd. and Inwood Bend	2020-07		450,000	3,550,000	4,000,000
Cudia City Wash Crossing at Summit Boulevard	2021-03			300,000	2,700,000
Invergordon Rd. at the Inwood Bend Wash Crossing	2022-02			300,000	300,000
Wash Culvert Extension at McCall Road	2022-03			205,000	205,000
Waterman Lane Low Water Crossing	2022-04			150,000	150,000
LIBW ADMS Cheney Dr Alt 1	2022-06			1,500,000	1,500,000
<b>Stormwater Total</b>		<b>825,000</b>	<b>4,050,000</b>	<b>3,850,000</b>	<b>4,855,000</b>
					<b>13,580,000</b>



## REFINED OPTIONS

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### Option 2: Mapping (in addition to status quo)

#### Includes:

- **Continue Mapping Flood Prone Areas**
- **Field verify FCDMC's FLO-2d mapping**
- **Determine path and depth of flood water**
- **Lot by lot drainage studies**
- **Notification of residents, better decisions for Flood Insurance**
- **Would need to be updated periodically**



# REFINED OPTIONS

## Mapping

### Pros

- More information for development reviews
- More information for property owners
- Town is being proactive
- Eventual outfall reduction

### Cons

- Minimal flood mitigation
- Requires town funds to map, on-going
- Passively addressing the issue
- Still requires lot by lot drainage solutions



# REFINED OPTIONS

## Mapping impact on CIP

- Cheney and Cherokee Watershed Study
- Future Watershed Studies Scope Change
- Reduce budget from \$1M to \$450k

<b>Stormwater</b>					
Hummingbird Lane/Quartz Mountain Road	2019-07	425,000			425,000
Berneil Channel Improvements	2019-08	400,000	3,600,000		4,000,000
Scottsdale Rd. and Inlet/Berneil	2020-07		450,000	3,550,000	4,000,000
Cudia City Wash Crossing at Summit Boulevard	2021-03			300,000	2,700,000
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					<b>13,580,000</b>



## RECOMMENDED OPTION

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### **Option 3: Flood Control District Projects (in addition to mapping & status quo)**

#### **Includes:**

- **Follow the FCDMC schedule for Area Drainage Master Plan's (ADMP's)**
- **Participate on design and construction of alternatives identified**
- **Commit town funds to cost share on projects identified in ADMP's**
- **Town constructs very small local projects (i.e. curb and gutter)**

# RECOMMENDED OPTION

## Combination of All Three Refined Options

### Status Quo

- Update SDDM
- Drainage as part of other CIP projects
- Residents maintain washes
- Roadway maintenance
- Meet federal requirements

+

### Mapping

- Utilize FCDMC mapping data
- Town funds combining data from ADMP's
- Town funds updating data
- Best data possible for residents and development

+

### FCDMC Projects

- Partner with FCDMC on design and construction of regional projects in town
- Town completes very small projects out of operating budget

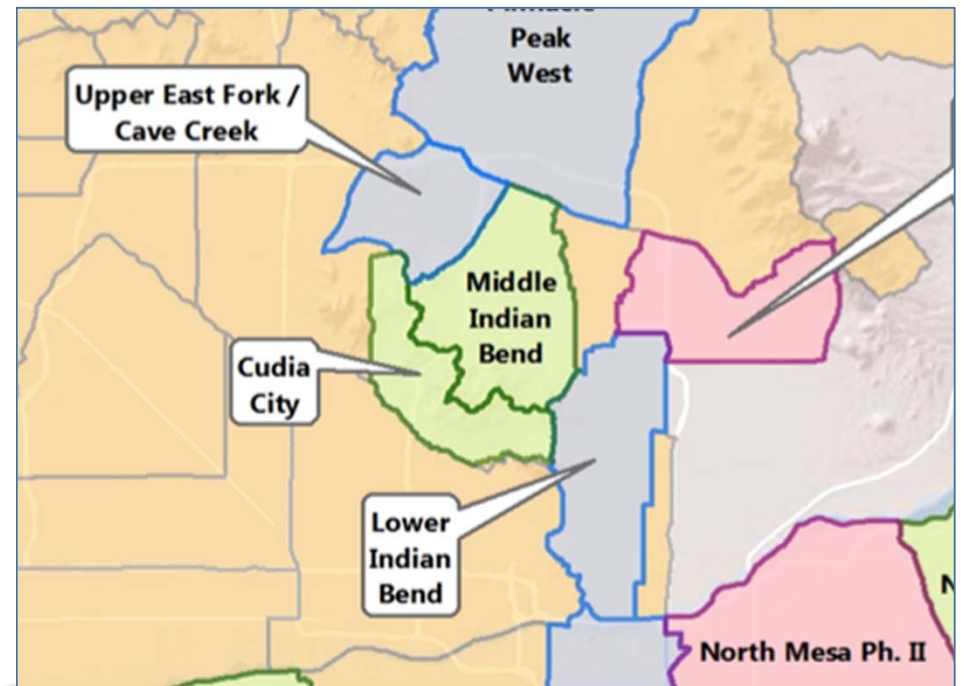
March 23<sup>rd</sup>, 2017



## RECOMMENDED OPTION

### Flood Control District Area Drainage Master Plan's

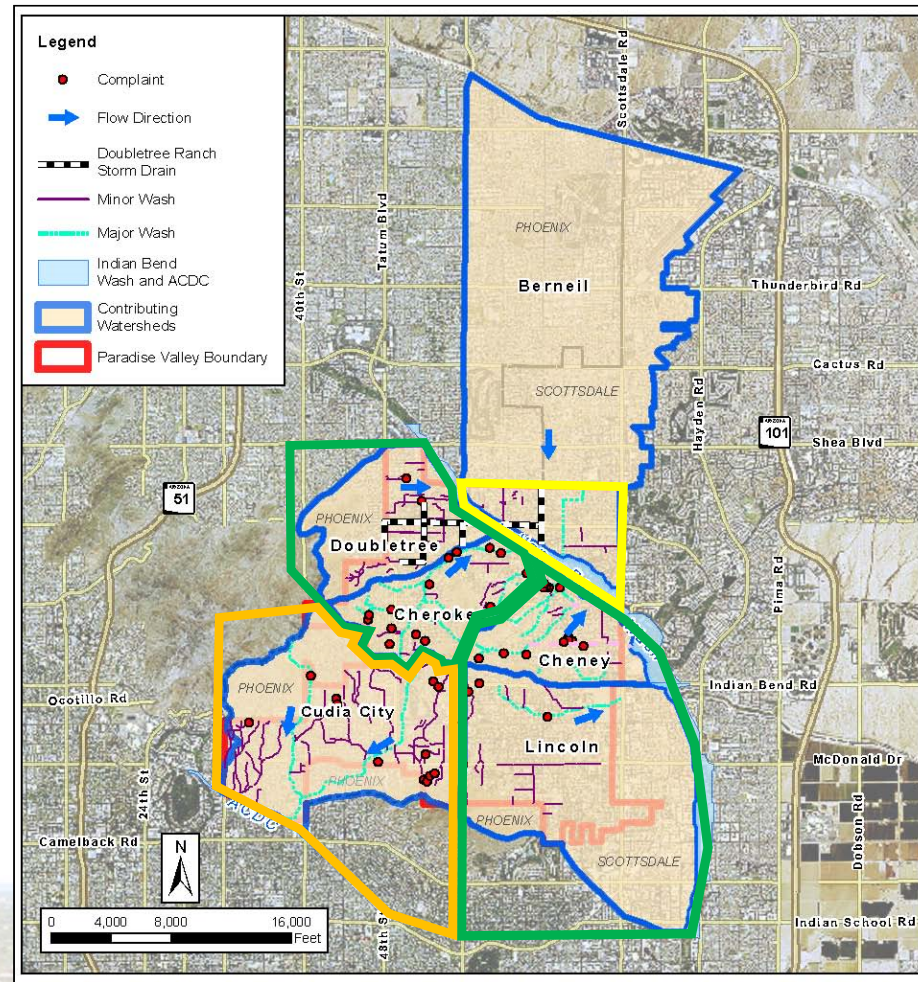
- **Active ADMP's**
  1. Lower Indian Bend Wash
  2. Middle Indian Bend Wash
- **FY18 ADMP's**
  1. Cudia City



March 23<sup>rd</sup>, 2017



# RECOMMENDED OPTION



March 23<sup>rd</sup>, 2017



## RECOMMENDED OPTION

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### Flood Control District Area Drainage Master Plan's

- **Town will need to:**
  - **Map Berneil Watershed**
  - **Cut out areas of larger ADMP's to create one townwide FLO-2D model**
  - **Manage changes and updates to the FLO-2D model in the future**
  - **Approximately \$450k initial effort, \$10k on-going**



## RECOMMENDED OPTION

### Flood Control District Projects

#### Pros

- Town is mitigating flood events
- Regional scale solutions
- Cost sharing for design and construction
- More information for development reviews and residents

#### Cons

- FCDMC is utilizing a 10 year design for future projects
- Less control over prioritization and timing of future projects
- Competing with other municipalities for FCDMC funding
- Large financial commitment



## RECOMMENDED OPTION

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### **Flood Control District Projects impact on CIP**

- **Cheney and Cherokee Watershed Study**
- **Future Watershed Studies Scope Change**
  - **Reduce budget from \$1M to \$450k**
- **CIP Stormwater budget is restructured to include FCDMC projects and small miscellaneous local projects**



## RECOMMENDED OPTION

### Flood Control District Projects impact on CIP continued

	FY18	FY19	FY20	FY21	FY22
Town Mapping Effort		\$450,000			
Wash Culvert Extension McDonald Drive	\$205,000				
52 <sup>nd</sup> Street Stormwater Improvements	\$100,000				
FCD LIBW Cheney Improvements Alt 1 <sup>1</sup>		\$1,500,000	\$6,000,000		
FCD LIBW PV Wash Improvements Alt 3 <sup>1,2</sup>					
FCD LIBW Invergordon Improvements Alt 1 <sup>1</sup>				\$1,300,000	\$5,200,000
FY Total	\$305,000	\$1,950,000	\$6,000,000	\$1,300,000	\$5,200,000
<b>Town Total</b>	<b>\$305,000</b>	<b>\$1,200,000</b>	<b>\$3,000,000</b>	<b>\$650,000</b>	<b>\$2,600,000</b>

1 - 50% cost share with FCD

2 – Fiscal Year 23 and 24 (\$11.8M total, \$5.9M town)



March 23<sup>rd</sup>, 2017

## RESOLUTION SLIDES

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### Articulate policy in an adopted resolution.

- Option 1: Status Quo

The Town of Paradise Valley shall provide storm water management that balances its limited government service model with appropriate opportunities for individuals to purchase federally backed flood insurance and regulate new construction such that the 100 year, 2 hour storm event is partially mitigated.



## RESOLUTION SLIDES

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### Articulate policy in an adopted resolution.

- Option 2: Mapping

The Town of Paradise Valley shall provide storm water management that balances its limited government service model with the robust development of tools and information for property owners to mitigate flooding risks on their parcels.



## RESOLUTION SLIDES

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### Articulate policy in an adopted resolution.

- Option 3: Flood Control District Projects

The Town of Paradise Valley shall provide storm water management services such that information concerning the 100 year, 2 hour storm event is widely known by property owners; Paradise Valley property owners have the ability to purchase federally backed flood insurance; new construction is regulated to mitigate the impacts of storm drainage; and the Town participates in regional flood control projects with other government agencies to reduce storm related damages.



## KEY QUESTION

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**What is the philosophical position of the Town Council regarding the provision of storm water services by the municipality?**

