

Storm Resiliency & Infrastructure Development Review Committee

New Development Identified Adverse Drainage Impacts

**Department of Public Works & Planning Department
March 1, 2019**

Agenda



- Types of New Development

- Types of Adverse Impacts

- Causes & Examples of Adverse Impacts from New Development

Types of New Development



- ❖ Residential Subdivisions
- ❖ Industrial
- ❖ Commercial
- ❖ In-Fill Lots

Types of Adverse Impacts



Upstream of New Development

▪ Flooding

- Restricted conveyance through new development.
- Elevated conveyance through new development.
- Impacts to Groundwater?

Downstream of New Development

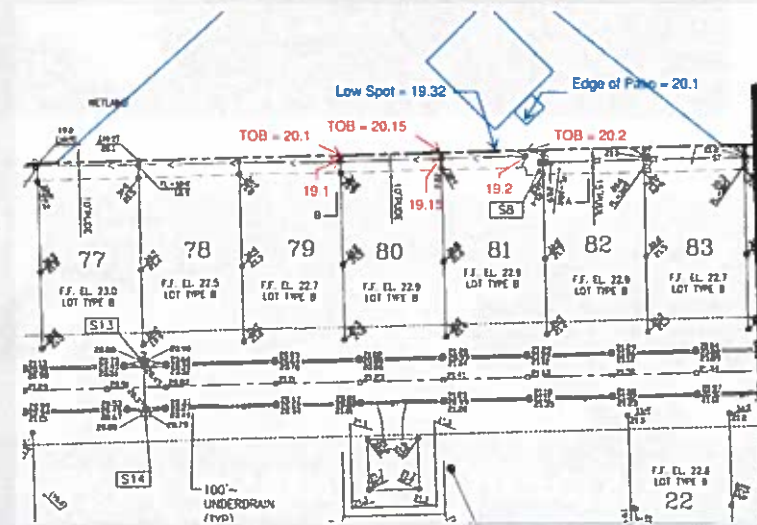
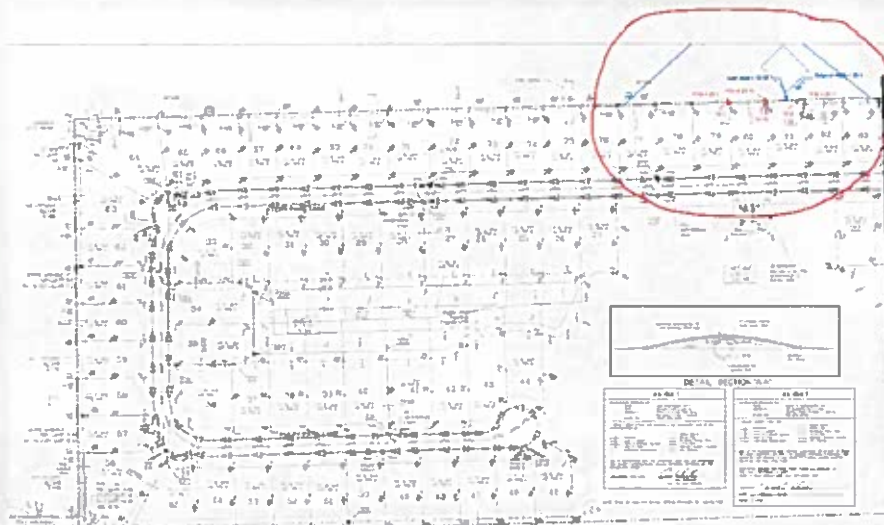
▪ Flooding

- Increased Flow from new development.
- Flow Pattern Altered & Concentrated from new development.

Causes & Examples of New Development Adverse Impacts

□ Upstream of New Development

- Flooding
 - Restricted conveyance through new development
 - **Failure to account for off-site contributing area**
 - Avery Park



Causes & Examples of New Development Adverse Impacts

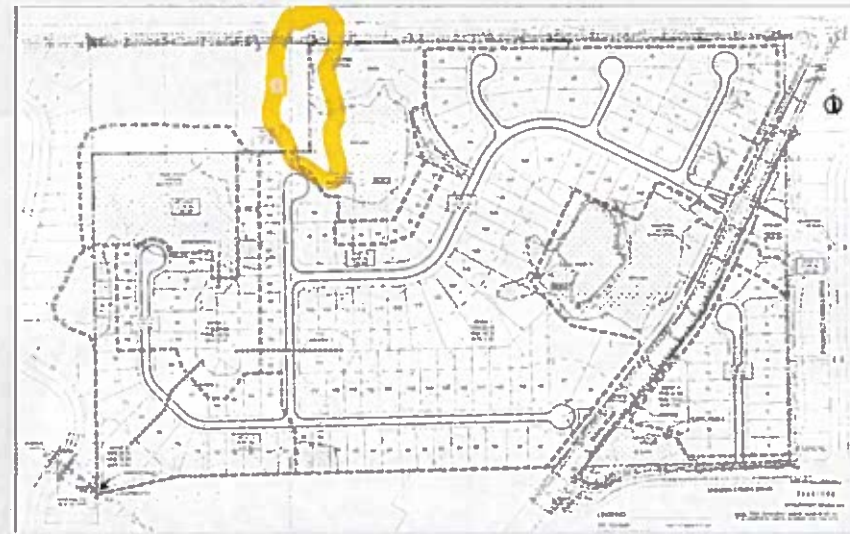
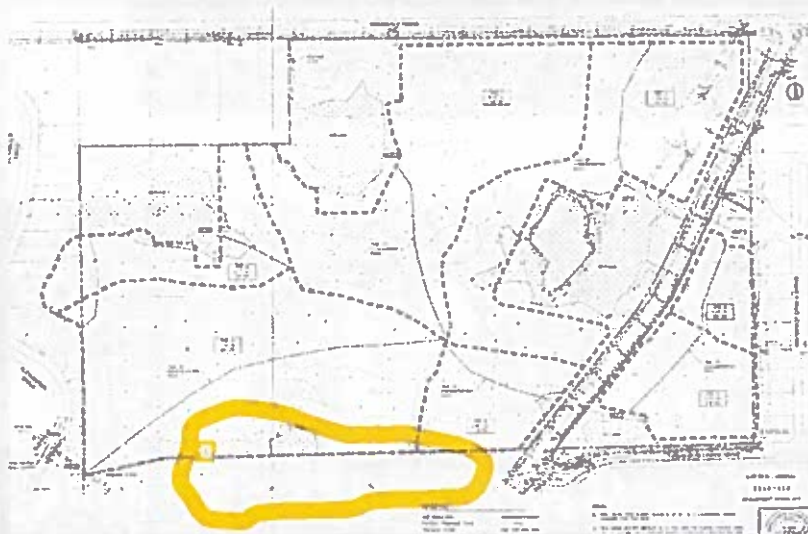


Causes & Examples of New Development Adverse Impacts



□ Upstream of New Development

- Flooding
 - Restricted conveyance through new development
 - Failure to account for off-site contributing area
 - Summer Walk

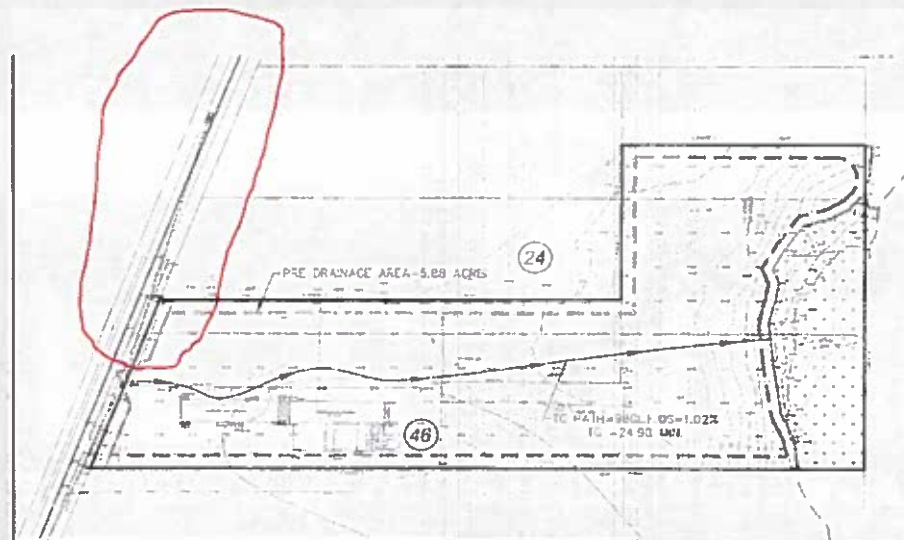


Causes & Examples of New Development Adverse Impacts



□ Upstream of New Development

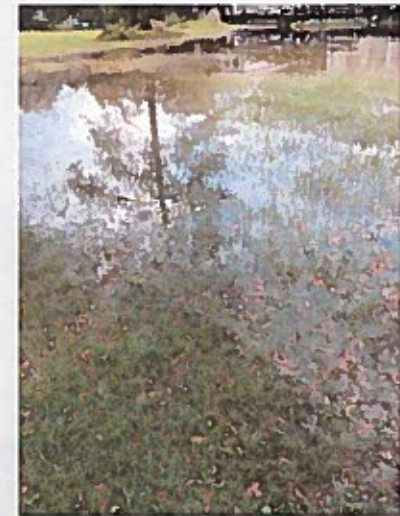
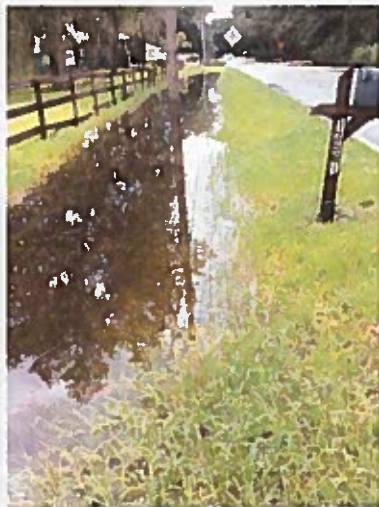
- Flooding
 - Restricted conveyance through new development
 - Failure to account for off-site contributing area
 - White Oaks Farms (Aladdin Road)



Causes & Examples of New Development Adverse Impacts



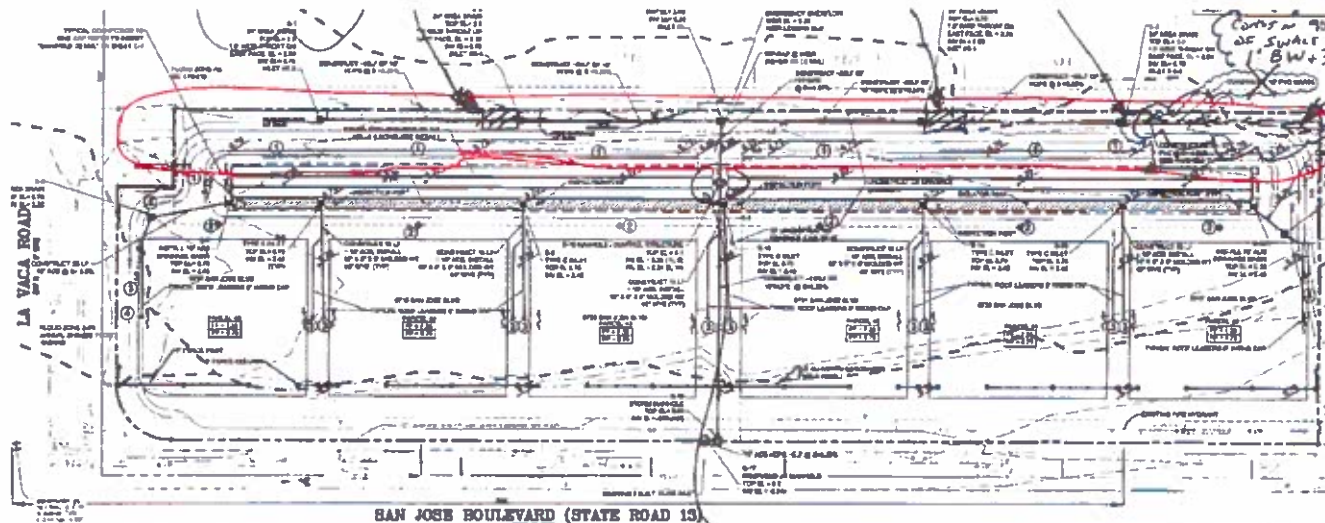
Causes & Examples of New Development Adverse Impacts



Causes & Examples of New Development Adverse Impacts

□ Upstream of New Development

- Flooding
 - Restricted conveyance through new development
 - Failure to maintain drainage during construction.
 - San Jose Estates



Causes & Examples of New Development Adverse Impacts



Causes & Examples of New Development Adverse Impacts

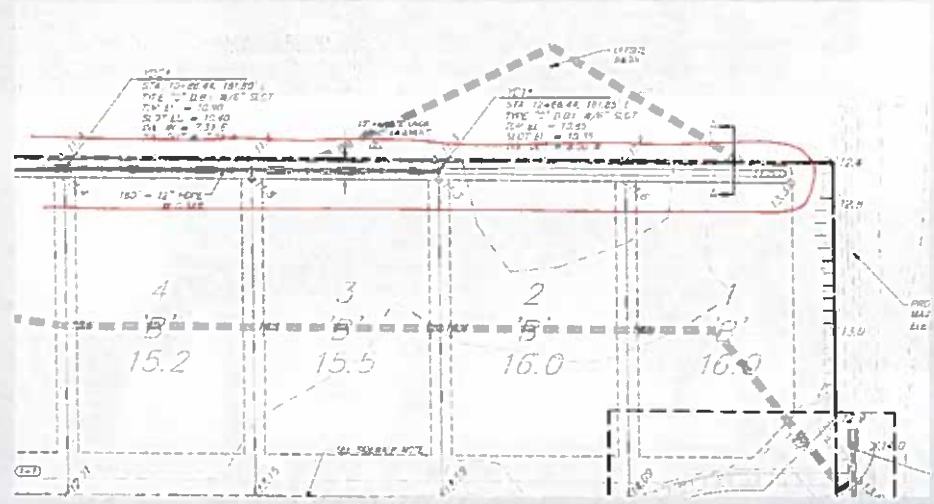
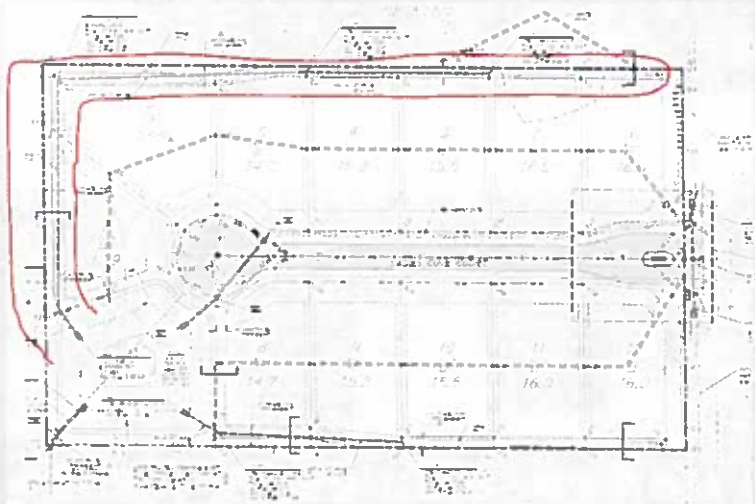


Causes & Examples of New Development Adverse Impacts



□ Upstream of New Development

- Flooding
 - Restricted conveyance through new development
 - Failure to maintain drainage during construction
 - Flynn Road Development



Causes & Examples of New Development Adverse Impacts



Causes & Examples of New Development Adverse Impacts



Causes & Examples of New Development Adverse Impacts



□ Upstream of New Development

- Flooding
 - Elevated conveyance through new development
 - **Added fill that creates conditions that block drainage**
 - Avery Park



Causes & Examples of New Development Adverse Impacts



□ Upstream of New Development

- Flooding
 - Elevated conveyance through new development
 - Added fill that creates conditions that block drainage
 - Oriental Gardens (In-Fill Lot)



Causes & Examples of New Development Adverse Impacts



Causes & Examples of New Development Adverse Impacts



□ Upstream of New Development

▪ Flooding

• Impacts to Groundwater?

- **Filling low areas where groundwater use to “daylight” and, following development impacts, potentially creates an elevated groundwater gradient upstream.**

- San Jose Estates (pictures)
- Avery Park



This developer
Thinks they are
done

Causes & Examples of New Development Adverse Impacts



Causes & Examples of New Development Adverse Impacts



❑ Downstream of New Development

- Flooding
 - Increased Flow from new development
 - **Design did not account for all off-site contributing area and/or was inadequate to account for new development.**
 - **Maintenance of drainage during construction not addressed.**
 - Flynn Road
 - Summer Walk

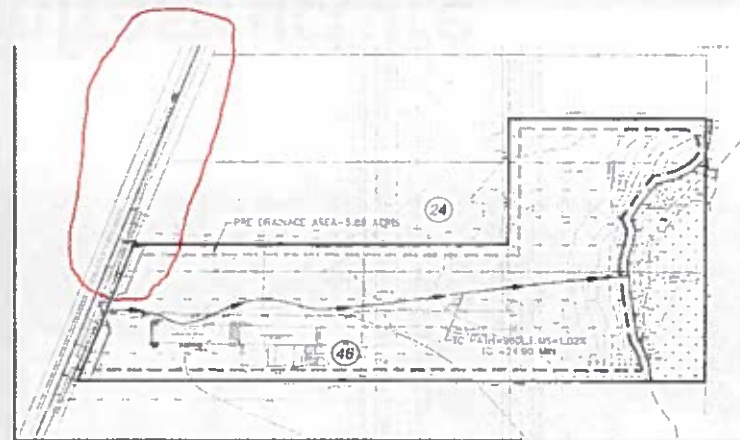
Causes & Examples of New Development Adverse Impacts



□ Downstream of New Development

- Flooding
 - Flow Pattern Altered & Concentrated from new development
 - **Design redirected flow and concentrated flow different than Pre-development which changes flow intensity to downstream property (one example is altering sheet flow to a point discharge).**
 - White Oaks Farms (Aladdin Road)

Causes & Examples of New Development Adverse Impacts





Storm Resiliency & Infrastructure Development Review Committee

Questions?

**Department of Public Works & Planning Department
March 1, 2019**