



# Smart Contract Security Audit

## Audit details:

Audited project:	Municipal Token
Deployer address:	0x066697da50ce6932f3d190ac9058ab7a6b82d735
Client contacts:	Municipal Token team
Blockchain:	Binance Smart Chain
Project website:	<a href="https://municipaltoken.co.uk">https://municipaltoken.co.uk</a>

May, 2021  
TechRate

# Disclaimer

This is a limited report on our findings based on our analysis, in accordance with good industry practice as at the date of this report, in relation to cybersecurity vulnerabilities and issues in the framework and algorithms based on smart contracts, the details of which are set out in this report. In order to get a full view of our analysis, it is crucial for you to read the full report. While we have done our best in conducting our analysis and producing this report, it is important to note that you should not rely on this report and cannot claim against us on the basis of what it says or doesn't say, or how we produced it, and it is important for you to conduct your own independent investigations before making any decisions. We go into more detail on this in the below disclaimer below – please make sure to read it in full.

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The analysis of the security is purely based on the smart contracts alone. No applications or operations were reviewed for security. No product code has been reviewed.

# Background

TechRate was commissioned by Municipal Token to perform an audit of smart contracts:

- <https://bscscan.com/address/0x0c6a8425Bb130b04B8D6eB12051F557956Fb03d8#code>

The purpose of the audit was to achieve the following:

- Ensure that the smart contract functions as intended.
- Identify potential security issues with the smart contract.

The information in this report should be used to understand the risk exposure of the smart contract, and as a guide to improve the security posture of the smart contract by remediating the issues that were identified.

# Contracts details

Token contract details for 12.05.2021.

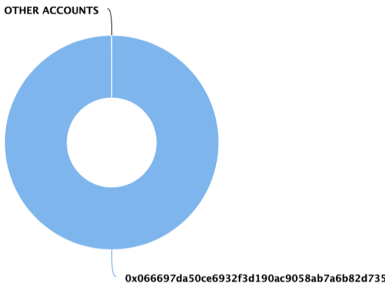
Contract name:	Municipal Token
Contract address:	0x0c6a8425Bb130b04B8D6eB12051F557956Fb03d8
Total supply:	10000000000000000
Token ticker:	\$MUNI
Decimals:	0
Token holders:	1
Transactions count:	1
Top 100 holders dominance:	100 %
Tax fee:	6
Uniswap pair:	0x00
Uniswap router:	0x00
Fee collector:	0x066697da50ce6932f3d190ac9058ab7a6b82d735
Contract deployer address:	0x066697da50ce6932f3d190ac9058ab7a6b82d735
Contract's current owner address:	0x066697da50ce6932f3d190ac9058ab7a6b82d735

# Municipal Token token distribution

The top 100 holders collectively own 100.00% (10,000,000,000,000,000.00 Tokens) of Municipal Token

Token Total Supply: 10,000,000,000,000,000.00 Token | Total Token Holders: 1

Municipal Token Top 100 Token Holders  
Source: BscScan.com



(A total of 10,000,000,000,000,000.00 tokens held by the top 100 accounts from the total supply of 10,000,000,000,000,000.00 token)

Rank	Address	Quantity (Token)	Percentage
1	0x066697da50ce6932f3d190ac9058ab7a6b82d735	10,000,000,000,000,000	100.0000%

# Contract functions details

## + Context

- [Int] \_msgSender
- [Int] \_msgData

## + [Int] IERC20

- [Ext] totalSupply
- [Ext] balanceOf
- [Ext] transfer #
- [Ext] allowance
- [Ext] approve #
- [Ext] transferFrom #
- [Ext] increaseAllowance #
- [Ext] decreaseAllowance #
- [Ext] burn #
- [Ext] burnFrom #

## + [Int] UNIV2Sync

- [Ext] sync #

## + [Int] IUniswapV2Router

- [Ext] WETH
- [Ext] swapExactTokensForETHSupportingFeeOnTransferTokens #

## + [Int] IWETH

- [Ext] deposit (\$)
- [Ext] balanceOf #
- [Ext] transfer #
- [Ext] withdraw #

## + [Lib] SafeMath

- [Int] add
- [Int] sub
- [Int] sub
- [Int] mul
- [Int] div
- [Int] div
- [Int] mod
- [Int] mod

## + [Lib] Address

- [Int] isContract
- [Int] sendValue #
- [Int] functionCall #

- [Int] functionCall #
  - [Int] functionCallWithValue #
  - [Int] functionCallWithValue #
  - [Prv] \_functionCallWithValue #
- + Ownable (Context)
- [Pub] <Constructor> #
  - [Pub] owner
  - [Pub] feeCollector
  - [Pub] renounceOwnership #
    - modifiers: onlyOwner
  - [Pub] transferOwnership #
    - modifiers: onlyOwner
  - [Pub] transferCollector #
    - modifiers: onlyCollector
- + DeflationaryERC20 (Context, IERC20, Ownable)
- [Pub] <Constructor> #
  - [Ext] name
  - [Ext] symbol
  - [Ext] decimals
  - [Ext] totalSupply
  - [Pub] balanceOf
  - [Pub] transfer #
  - [Pub] allowance
  - [Pub] approve #
  - [Pub] transferFrom #
  - [Pub] increaseAllowance #
  - [Pub] decreaseAllowance #
  - [Pub] getChainID
  - [Ext] setSwapPair #
    - modifiers: onlyOwner
  - [Ext] setSwapRouter #
    - modifiers: onlyOwner
  - [Pub] calculateAmountsAfterFee
  - [Ext] burnFrom #
  - [Ext] burn #
  - [Int] \_transfer #
  - [Ext] bulkTransfer #
  - [Ext] bulkTransferFrom #
  - [Pub] excludeFromFee #
    - modifiers: onlyOwner
  - [Pub] includeInFee #
    - modifiers: onlyOwner
  - [Pub] isExcludedFromFee
  - [Prv] swapBufferTokens #
  - [Prv] swapTokensForEth #

- [Int] **updateBalances** #
- [Int] **\_mint** #
- [Int] **\_burn** #
- [Int] **\_approve** #
- [Int] **\_beforeTokenTransfer** #
- [Ext] **<Fallback>** (\$)
- [Ext] **transferAnyTokens** #
  - modifiers: **onlyCollector**

+ **MunicipalToken** (DeflationaryERC20)

- [Pub] **<Constructor>** #
  - modifiers: **DeflationaryERC20**

(\$ ) = payable function

# = non-constant function



# Issues Checking Status

№	Issue description.	Checking status
1	Compiler errors.	Passed
2	Race conditions and Reentrancy. Cross-function race conditions.	Passed
3	Possible delays in data delivery.	Passed
4	Oracle calls.	Passed
5	Front running.	Passed
6	Timestamp dependence.	Passed
7	Integer Overflow and Underflow.	Passed
8	DoS with Revert.	Passed
9	DoS with block gas limit.	Passed
10	Methods execution permissions.	Passed
11	Economy model of the contract.	Passed
12	The impact of the exchange rate on the logic.	Passed
13	Private user data leaks.	Passed
14	Malicious Event log.	Passed
15	Scoping and Declarations.	Passed
16	Uninitialized storage pointers.	Passed
17	Arithmetic accuracy.	Passed
18	Design Logic.	Passed
19	Cross-function race conditions.	Passed
20	Safe Open Zeppelin contracts implementation and usage.	Passed
21	Fallback function security.	Passed

# Security Issues

## High Severity Issues

No high severity issues found.

## Medium Severity Issues

No medium severity issues found.

## Low Severity Issues

### 1. Different array sizes

Issue:

There is no checking that `addrs` and `amounts` arrays have the equal sizes in function `bulkTransfer`.

Recommendation:

Check that arrays sizes are equal. Same for the `bulkTransferFrom` function.

## Owner privileges

- ☐ Owner can change the swap pair.
- ☐ Owner can change the swap router.
- ☐ Collector can withdraw tokens and BNBs from the contract.

## Conclusion

Smart contracts contain low severity issues and owner privileges. LP pair security could not be checked as it is the zero address. No liquidity locking details provided by the team.

Techrate note:

*Please check the disclaimer above and note, the audit makes no statements or warranties on business model, investment attractiveness or code sustainability. The report is provided for the only contract mentioned in the report and does not include any other potential contracts deployed by Owner.*